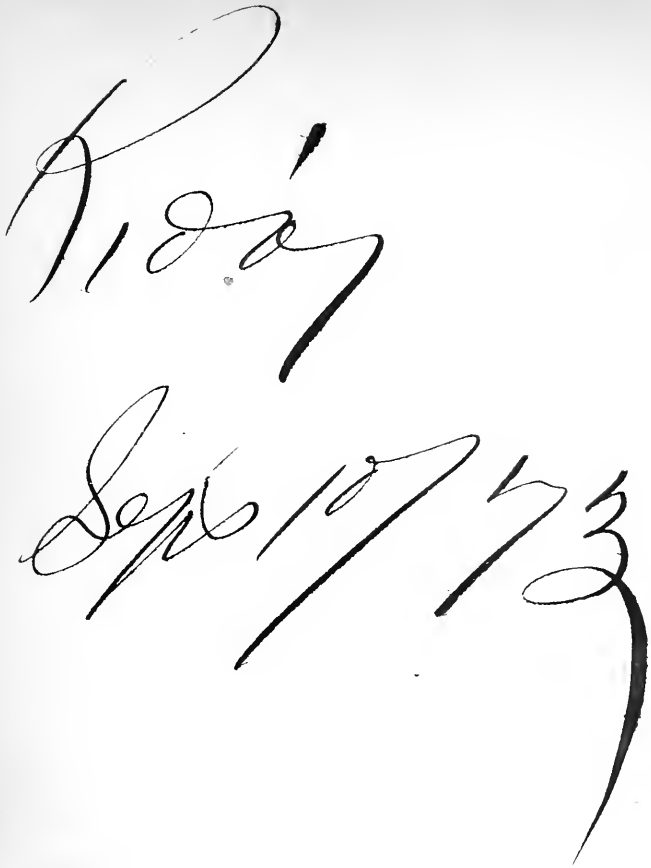

THE

HANDBOOK *for* MIDWIVES.

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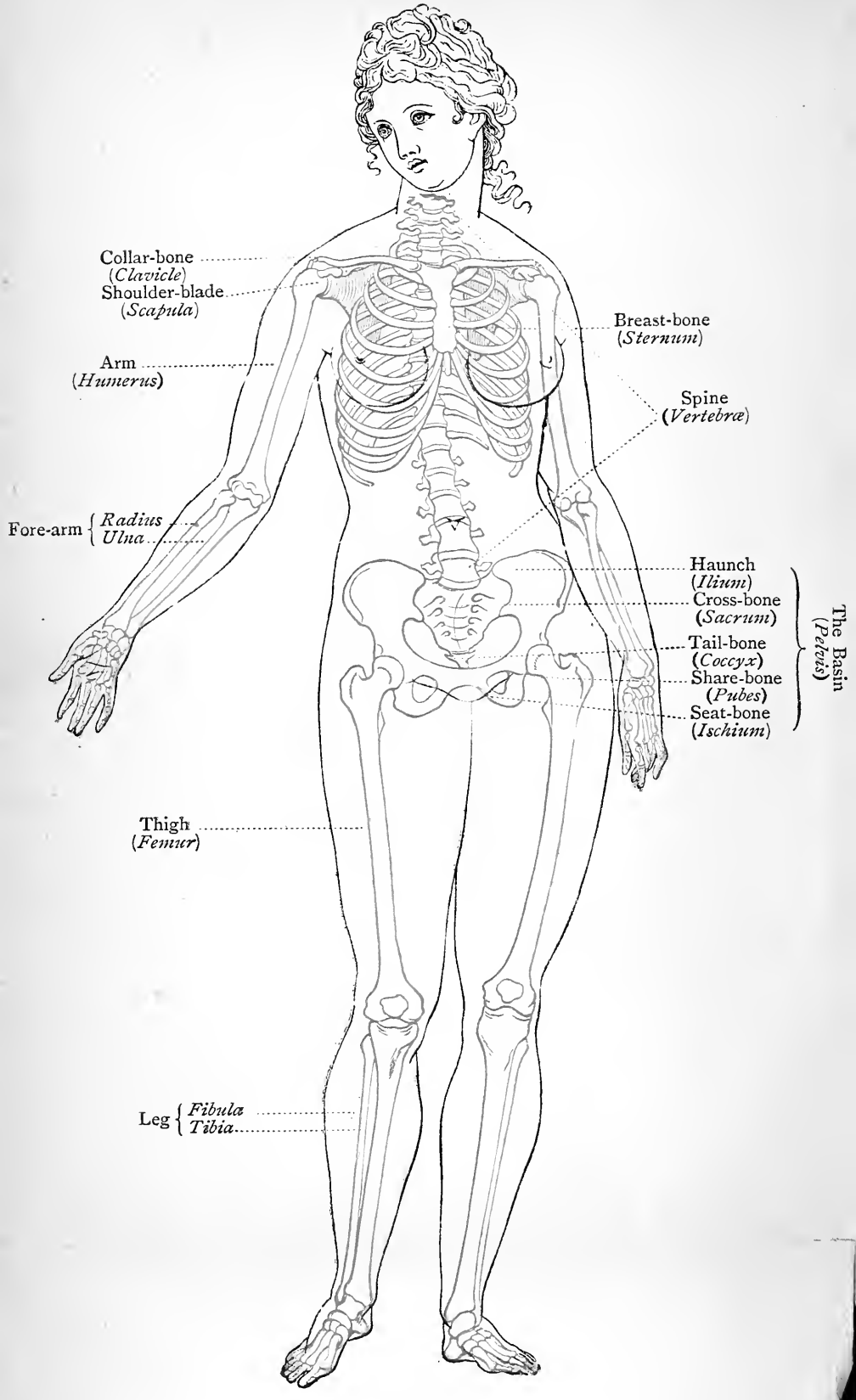

FRONTISPIECE

THE

HANDBOOK *for* MIDWIVES.

BY

HENRY FLY SMITH, B.A. M.B. Oxon. M.R.C.S. Eng.

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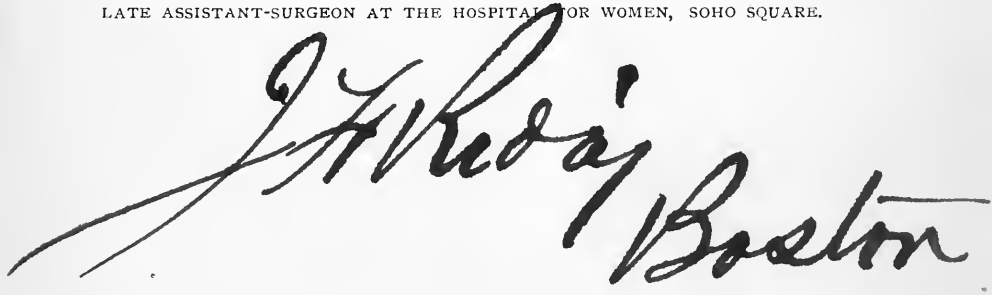

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PREFACE.

THE MIDWIFE will find in the following pages, described in familiar language, all the information necessary for a thorough understanding of so much of the art of midwifery as belongs to her. Technical words and phrases are added and explained, so that she may be able to understand the orders and remarks of the accoucheur, when his scientific assistance is required.

A general anatomical sketch of the human body is given with an exact description of the parts concerned in the business of conception, pregnancy, and delivery. The progress of pregnancy and its signs, the management of natural labour, and of the lying-in state, are minutely detailed. The diseases and accidents peculiar to each condition, the signs and symptoms of *un*natural labour, and the treatment, are fully described as far as the midwife requires for her guidance, and for the recognition of impending danger, demanding the attendance of the accoucheur.

Drawings and diagrams are introduced wherever they can be of service in facilitating the understanding of the text.

The scope of the book has been generally regulated by the German manual for midwives, written by Dr. B. Schultze, Professor of Obstetrics in the University of Jena. The works of Cazeau, Churchill, Ramsbotham, Swayne, Meigs, Bedford, and other authors, have been consulted throughout, and due acknowledgment is here offered for the use made of their well known standard writings.

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THE

HANDBOOK *for* MIDWIVES.

PART I.

CHAPTER I.

GENERAL DESCRIPTION OF THE HUMAN BODY.

1. The Body consists of a framework of bones, the *skeleton*, tied together at the joints by ligaments, and of the *soft parts*, the organs, vessels, nerves, muscles, and connective tissue, which collectively are called the *flesh*.

2. The parts of the skeleton are the skull and lower jaw, the spine, the ribs, the breast-bone, the collar-bones, the blade-bones, the basin, the arms and hands, the legs and feet. (See *frontispiece*.)

3. The Skull (*cranium*) consists of several bones all firmly locked together in the grown person, but some of which are separate in the infant to allow of the more easy passage of the head through the parts of the mother during birth (see § 117).

4. The Spine, or backbone (vertebral column), extends from the back of the skull, which it supports, to the 'basin,' and is made up of short bones called 'vertebræ,' which are

so shaped and placed upon one another as to form a continuous tube, in which lies the *spinal marrow* (spinal cord); the seven topmost bones are called *cervical*, or neck vertebræ; the next twelve are called *dorsal*, or back vertebræ; the next five are called *lumbar*, or loin vertebræ. The column terminates with the *cross-bone* (*sacrum*), § 26, and *tail-bone* (*coccyx*), § 27; these last form the back part of the basin, § 8.

5. To each dorsal vertebra right and left a RIB is attached, making in all twenty-four ribs. These ribs, with the exception of the two lowest, are united in front to the BREAST-BONE (*sternum*), so as to form a hollow box, the *chest*, § 15.

6. The COLLAR-BONES (*clavicle*), one on each side of the neck, are shaped like the italic letter *f* and are attached by one end to the breast-bone, and by the other to the blade-bone.

7. The BLADE-BONE (*scapula*), whose triangular shape can be traced beneath the skin, is crossed obliquely by a ridge called the spine, which ends in a projection (*acromion*), forming with the end of the collar-bone the top of the shoulder.

8. The BASIN (PELVIS) consists of four sets of bones, the two *innominate bones*, which form the *share-bone* or the *pubes*, in front, the *haunch-bones* at the sides, and the *seat-bones* below; the *cross-bone*; and the *tail-bone*. As a thorough comprehension of the shape and dimensions of the *basin* or *pelvis* is essential to the intelligent practice of midwifery, a full description of it is given further on, Ch. II.

9. The ARM is attached by the shoulder joint to the blade-bone or scapula, § 7. The upper arm consists of one bone, the *humerus*, jointed at the *elbow* to the fore arm, which consists of two bones, the *ulna* on the inner side, the *radius* on the outer. The WRIST comprises eight bones, the HAND five, the FINGERS each three, the THUMB two.

10. The LEG is attached to the basin or pelvis by the hip joint. The thigh has one bone called the *femur*. The lower leg connected by the knee joint, and covered by the knee-pan (*patella*), has two bones, the *shin* or *tibia* on the

inner side, the *small bone* or *fibula* on the outer. The ancle joint connects the leg and foot. The under surface of the latter is called the *sole*, the upper is called the *back* or *dorsum*, behind is the *heel*, and in front are the *toes*.

11. The body may be divided into the head, the trunk, and the limbs.

12. The HEAD consists of the face, the skull, and the lower jaw. Within the skull lies the *brain*, a mass of nervous matter continuous with the spinal cord, § 4. From the brain or spinal cord delicate threads called *nerves* pass to every part of the body. Motion and sensation are dependent on the healthy condition of these organs, and injury or disturbance of their action may be followed by pain, § 29, convulsions, § 179, or paralysis, § 180.

13. The TRUNK consists of the neck (cervix), the chest (thorax), and the belly (abdomen). (Figs. 1 and 2.)

14. The front or anterior part of the neck is called the *throat*; the back or posterior part of the neck is called the *nape*. Close up underneath the jaw the bone of the tongue (*os hyoides*) can be felt; a little lower is a projection, commonly called 'Adam's apple,' more prominent in men than women (the thyroid cartilage), the interior of which forms part of the *larynx*, or instrument by which the voice is produced; below this the *windpipe* (trachea) can be readily traced.

15. The CHEST (*thorax*) is formed by the twelve dorsal vertebræ, § 4, the collar-bones, blade-bones, ribs, and breast-bone with the flesh; all these bones are so jointed to each other as to allow of considerable alternate contraction and expansion of the chest during the act of breathing.

16. On either side of the breast-bone (sternum) are the BREASTS (*mammæ*). These are made up of fat, connective tissue, vessels, nerves and the milk glands. These glands have some resemblance to bunches of currants, and terminate by fine tubes or ducts in the NIPPLE or TEAT (*mamilla*). The surface of the nipple is dark, and it is seated on a coloured

circle or *areola*, which in the virgin is usually of a rose colour, but becomes dark when pregnancy occurs, and never afterwards regains its former pink hue.

17. The hollow beneath the shoulder-joint is called the *arm pit* (*axilla*). The space below the left breast where the heart is felt beating is called the *cardiac* region.

18. The interior of the chest is called the *thoracic cavity*. Its chief contents are the heart with its vessels, and the lungs with their bronchial tubes, in which terminates the wind-pipe, § 14. The office of the lungs is to expose the blood to the action upon it of fresh air admitted to them through the larynx, trachea, and bronchial tubes during the act of *inspiration*, or drawing in the breath. If then, the expansion of the chest, § 15, is hindered by the clothing, as by tight-laced stays, or if the air is polluted, as by the breath of persons in close unventilated rooms, or by the gases from drains, &c., the office of the lungs is interfered with, the blood becomes impure and poisoned, and the result is ill-health or disease. The blood flows to the heart by the veins from every part of the body; is by it pumped into the lungs to be purified; returns to the heart, and is thence transmitted by the arteries throughout the system. This round is called the *circulation*. The *beat* or *pulse* of an artery corresponds with the beat of the heart, and by its pace and force the state of the circulation, which is usually different in disease from what it is in health, is judged. The *pulse* is commonly felt at the wrist, because at that part an artery lies near the surface of the body, and is therefore easily felt; in certain conditions the arteries at the temples of the head, and in the neck (carotid) can be seen pulsating. The number of beats for an adult is ordinarily about seventy a minute, though it varies much, even in health, in different persons, but it usually maintains its own rate in any individual. If then the midwife finds the pulse of a patient beating persistently 100 or more beats a minute, or that its force varies from that found in health, as

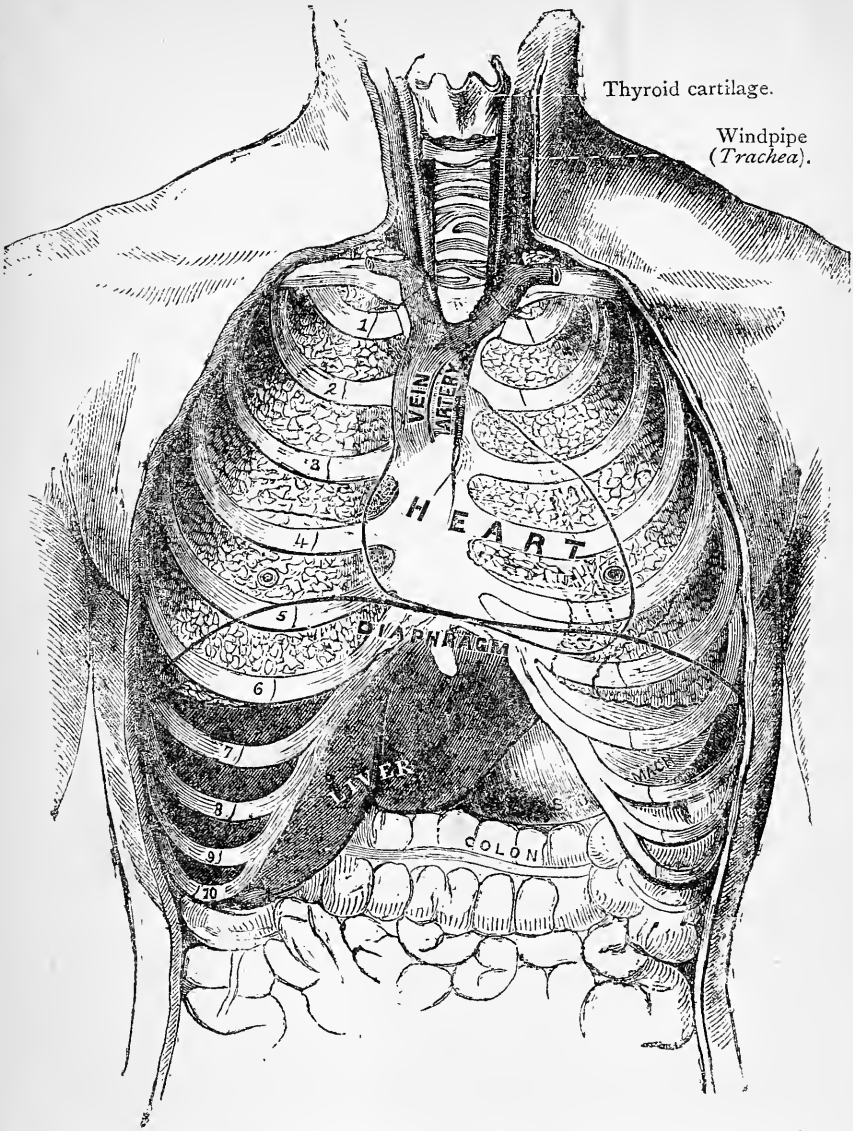


FIG. 1.—Front View of the Thorax. The Ribs and Sternum are represented in Relation to the Lungs, Heart, and other Internal Organs.

for example, if it is very weak or very rapid, or very slow or irregular in its beating, she should call for medical advice, as mischief is probably existing in some part of the body.

19. The part of the chest containing the lungs and heart is separated internally from the belly by a fleshy partition called the *diaphragm* or *mid-rib* which thus forms the floor of the thoracic cavity.

20. The Belly (Abdomen) is divided into two parts, an upper and larger part, the *abdomen* or belly, properly so-called, and a lower part, named the 'basin' or the *pelvic cavity*, § 23. For convenience of description, the belly or abdomen is marked out into nine regions. A line is drawn across the body at the level of the pit of the stomach, and a second line at the level of the hips; these two horizontal lines are crossed by two vertical lines drawn each from the breast to the middle of the groin. The upper third is thus marked off into the epigastric region, or pit of the stomach, with on either side the hypochondriac regions (hypo *under*, chondria *the cartilages of the ribs*). The middle part of the belly or abdomen is divided into the umbilical or navel region, and right and left lumbar or loin regions, the flanks. The lower third is divided into the hypogastric (hypo *under*, gaster *the stomach*) or pubic region in the centre, and the right and left iliac or inguinal regions on either side. These three, the pubic and two iliac regions, are often together called the *lower belly*.

The chief contents of the belly or abdomen, called the *viscera*, are as follows:—In the upper third going from left to right are the liver, with its gall bladder, portions of the intestines, the pancreas or sweet-bread, the stomach, and the spleen. In the middle and lower third are the small intestines or guts, and the large gut called the colon, which ascends from the right iliac region to a little above the level of the navel, then crosses and descends on the left side into the basin or pelvic cavity, where it is called the rectum or straight gut, and terminates at the fundament or *anus*. It is into this portion of the gut that injections, clysters or *enemata*, are thrown, § 152. The colon may often be felt distended with wind or *flatus*, and this condition is termed

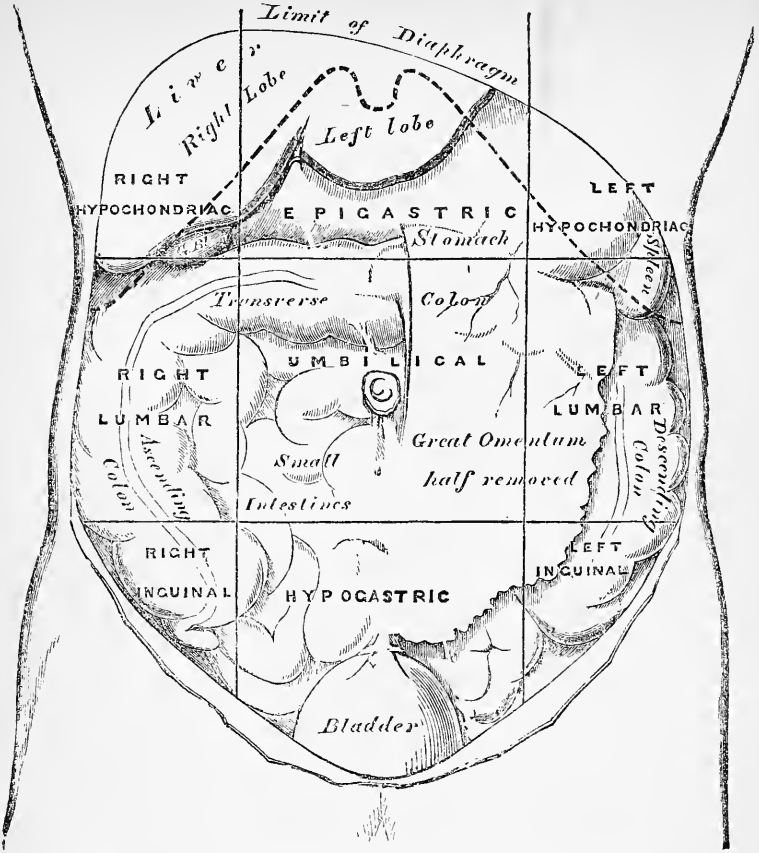


FIG. 2.—The Regions of the Abdomen and their Contents.
(Edge of Costal Cartilages in dotted outline.)

flatulency, and when excessive, as happens occasionally in puerperal inflammation of the bowels, 'meteorismus'; in this last case distension of the small as well as of the great gut takes place. When constipation is allowed to exist the colon often becomes loaded with solid fæces, which sometimes form a hard tumour or swelling imitating disease; irritation may thus be set up in the neighbourhood of the womb, interfering with the natural progress of pregnancy.

In the lumbar or loin regions lie the *kidneys* whose secretion, the urine, passes into the *bladder*. This vessel empties

itself by a small canal called the *urethra*, § 35. The bladder, when distended with urine, can be felt like a ball rising out of the 'basin' or pelvic cavity into the pubic region. The 'basin' or pelvic cavity contains the bladder when empty, the womb with its appendages, §§ 38, 41, and the rectum.

All these *viscera*—stomach, intestines, liver, pancreas, spleen, kidneys, bladder, womb, &c.—are covered, more or less, with a thin lining membrane, called the *peritoneum*. This membrane in certain parts is gathered into folds, which serve to tie or support certain of the viscera in their places, and these folds are called 'ligaments.'

21. In describing the body or any portion of it, the term *upwards* means in the direction of the head, *downwards* means in the direction of the feet, *forwards* means towards the front of the body, *backwards* means towards the spine. The terms *right* and *left* always refer to the right or left hand of the patient, never to the person speaking. The *inner* or *outer* side are spoken of with reference to a straight line supposed to be drawn from the top of the head (*vertex*) to between the feet, dividing the patient into two halves.

CHAPTER II.

THE BASIN OR PELVIS.

22. The female organs of generation are: the *ovaries* (*ovarium*, egg receptacle), in which the *ovum*, or egg, is secreted, whence it passes along the *Fallopian tubes* to the *uterus* or *womb*, whose office is to contain the fecundated ovum during its growth, and then to expel it along the *vagina* or *front passage* into the world (Figs. 12, 13). These organs are situated within a cavity the walls of which are composed of bones and of soft parts. The cavity is called the *basin*, the *pelvic cavity*, or *cavity of the pelvis*.

23. If the fleshy walls of the abdomen with all the viscera

are removed from the share-bone or *pubes* in front, to the *spine* behind, the *pelvis* (Figs. 3, 7) will represent an irregular shaped *basin*, the front side of which has been broken away (Fig. 7). The *upper part* spreads out winglike on both sides,

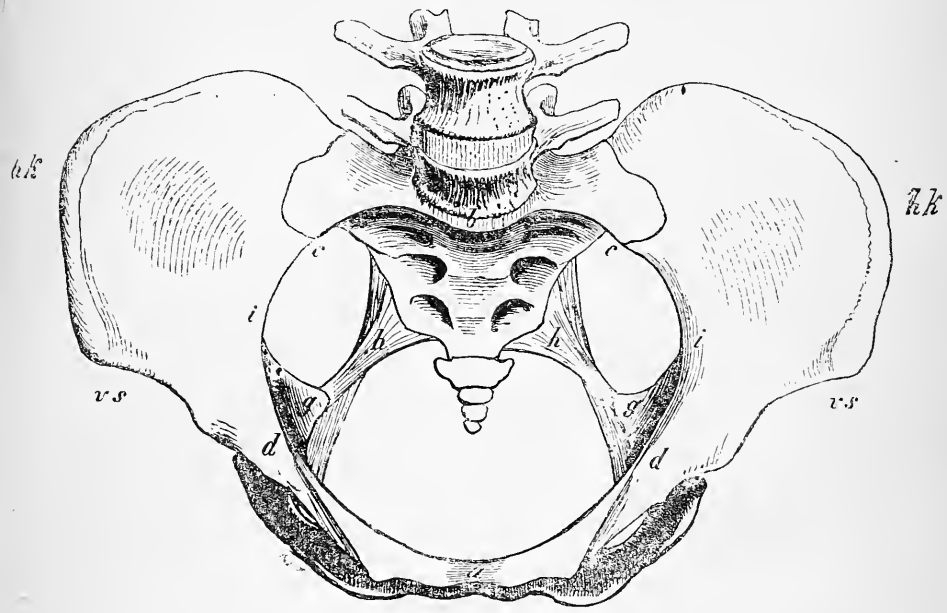


FIG. 3.

a, Pubes. *b*, Promontory of Sacrum. *c c*, Sacro-iliac joint. *g g*, Spine of Ischium. *h h*, Sacro-sciatic ligaments. *i i*, Brim. *h k*, Crest of Ilium. *v s*, Anterior superior spinous process.

and is bounded by a well-marked *line* which divides it from the *lower part*. Hence the upper is often called the *abdominal* or *false pelvis*, and the lower the *true pelvis*—the *little pelvis*, the *pelvic excavation*, *cavity of the pelvis*—the *line of division*, *ii*, is named the *brim*—the *superior strait*, the *entrance*, or *inlet* to the true pelvis.

24. The posterior wall of the upper pelvis is filled up by the projection of the last lumbar vertebra, which seated obliquely from front to back on the crossbone or sacrum forms with it the *sacro-vertebral angle* (Figs. 3, 4 *b*. Fig. 7 *a*).

The side walls are constituted by the upper or wing

portions of the *haunch-bones* or *ilia*, § 28, forming the *internal iliac fossæ*. The two angular projections in front just beneath the skin are called the *anterior superior spinous processes*, *vs*. The upper border is called the *crest of the ilium*, *hk*.

25. The True Pelvis, or hollow of the Basin, forms a curved canal larger in the middle than at its extremities, and slightly bent forward. The posterior wall is constituted by the sacrum or cross-bone, and coccyx or tail-bone. The side walls are formed partly by the seat-bones (*ischia*), and partly by the ligaments, *hh* (great and small sacro-sciatic) which tie the sacrum and ischia together, and the other soft parts. The anterior wall is completed by the pubes or share-bone, *a*.

26. The Sacrum, or Cross-Bone (Fig. 4), is a triangular bone; its direction is from above downwards, and from before backwards; being joined very obliquely to the last lumbar vertebra it projects into the *pelvis* or *basin*, and so forms a prominence called the *sacral promontory*, *b*. It is also curved forward at its lower part so as to present an anterior concavity, the *hollow of the sacrum* or *cross-bone*, *a*. It is wedged in between the *haunch-bones* (*ilia*); the joints, *c*, so formed are called the sacro-iliac articulations, or joints between the cross-bone and the haunch-bones.

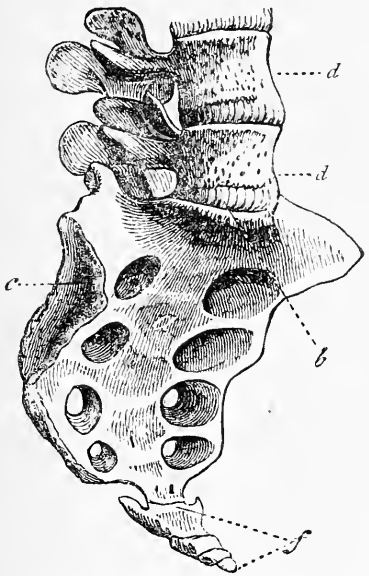


Fig. 4.—*a*, Hollow of Sacrum. *b*, Sacral Promontory. *c*, Joint with Iliac-bone (sacro-iliac). *dd*, Lumbar vertebræ. *f*, Coccyx.

The ligaments that tie these joints together sometimes become so softened and swelled during pregnancy as to allow of motion of the bones to such a degree that walking or even standing upright is rendered difficult if not impos-

sible. Should such misfortune occur surgical advice must be sought for without delay.

27. The Coccyx, Fig. 4, *f*, (tail—crupper—huckle-bone) is jointed to the cross-bone or sacrum. This joint, in most women up to about the age of thirty, is moveable, so that extension backwards is possible during labour, but in some women where the bone has become set (*anchylosed*), and the outlet is too small for the child to pass, fracture may occur either from pressure by the head of the child or being effected purposely by the accoucheur.

28. The Haunch, Side, or Hip-Bone (Figs. 5 and 6), (*os innominatum*), is really formed of three bones consolidated together.

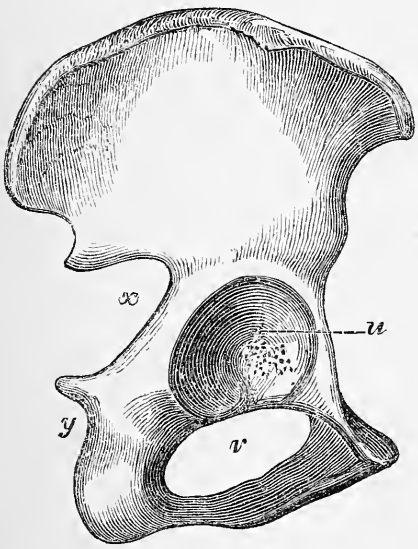


Fig. 5.

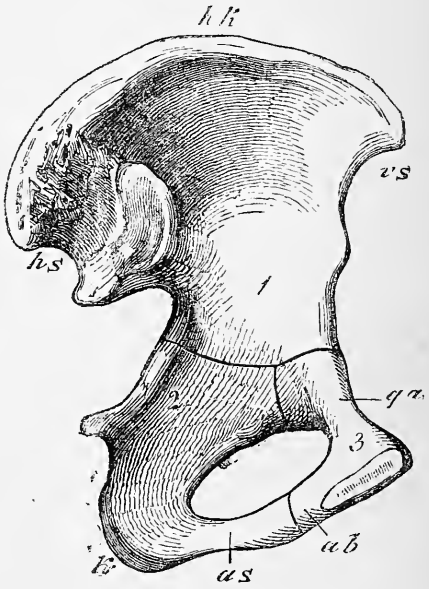


Fig. 6.

Fig. 5.—Outer surface of Innominate bone.—*u*, Socket for thigh-bone. *v*, Obturator opening. *y*, Spine of seat-bone. *x*, Sacro-sciatic notch.

Fig. 6.—Inner surface of Innominate bone.—3, Pubis whose branch *q a* meets 1 the Ilium, and branch *a b* meets 2 the Ischium. *k*, Seat-bone. *h k*, Crest of Ilium.

The upper or winglike portion, 1 (*ilium*) meets the *seat-bone*, 2 (*ischium*), and *share-bone*, 3 (*pubis*), in the centre of the cup-

like hollow, *u* (*acetabulum*), in which the head of the thigh-bone works, the inner surface being called the *acetabular region.* The *ischium* (seat-bone) presents on its posterior border a projection or knob called the spine of the ischium, *y*, which gives attachment to the small sacro-sciatic ligament, Fig. 3, *h*; the *tuberosity of the ischium*, Fig. 6, *k* (*tuber ischii*), or that part of the bone which forms the seat, gives attachment to the great sacro-sciatic ligament.

29. The PUBIS, Fig. 6, 3, is the anterior portion of the haunch-bone and joins its fellow of the other side to form the *pubes.* The two thus jointed are called the *share-bone*, and form the top of the *pubic arch.* The junction is called the *symphysis pubis.* The pubis joins the ilium and ischium by two branches like the letter ⊣, and the opening between these arms is called the obturator opening, *v*; through which passes the obturator nerve, running to certain muscles of the thigh. Pressure on this nerve by the child's head is a cause of *cramp* in the thigh. The cramp may be so terrible as to require the delivery to be hastened by the aid of instruments.

30. The OUTLET of the basin or pelvis, is the space between the tail-bone (*coccyx*), seat-bones (*ischia*), and share-bone (*pubes*), covered by the soft parts, in which are the openings of the fundament (*anus*) and the 'privates' (*pudenda*, or *vulva*), § 41, separated from each other by the *perineum*, § 36.

31. The measurements or diameters of the 'basin' or 'pelvis' are very important, as upon their relation to the diameters of the head or other part of the child, depends the possibility or otherwise of childbirth, and the ease or difficulty of labour.

32. The diameters[1] of a well-formed basin or pelvis in the natural condition are as follows:

[1] The measurements usually given in books are those of the bony pelvis, dry and denuded of the soft parts which diminish the diameters of the brim in the living subject but do not much affect the outlet.

They are antero-posterior $4\frac{1}{4}$, transverse $5\frac{1}{4}$, oblique 5 inches.

At the Brim.

From the share-bone (pubes) to the cross-bone (sacral promontory), the antero-posterior, conjugate, or straight diameter measures 4 inches, *a b*.

The transverse or cross diameter from ilium to ilium measures $4\frac{1}{2}$ inches, *e f*.

The oblique or diagonal diameter from the sacro-iliac joint of one side to the union of the branch of the pubis with the ilium of the other side measures $4\frac{3}{4}$ inches, *d c*.

At the Outlet.

From the share-bone (pubes) to the tail-bone (coccyx) the antero-posterior, or straight diameter (pubo-coccygeal) measures 4 inches, which may be increased to 5 inches by pushing back the tail-bone (coccyx).

Between the seat-bones (tuberosities of the ischia), the transverse diameter measures 4 inches, *g h*.

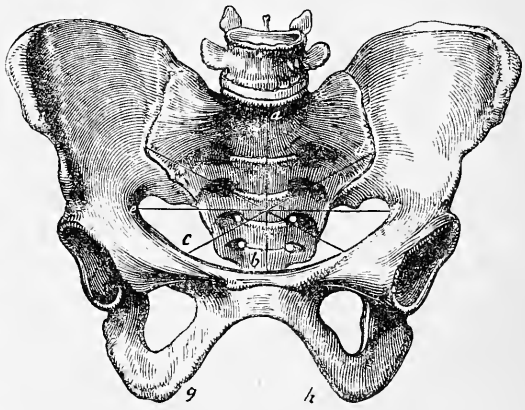


FIG. 7.—Anterior view of the female pelvis, with lines of measurement. *a b*, conjugate diameter of brim; *c d*, diagonal ditto; *e f*, transverse ditto; *g h*, transverse diameter of inferior outlet.

33. The actual outlet of the basin (pelvic canal) by which the child escapes into the world is at the anterior margin of the *perineum*, § 36.

34. The direction which the child takes in passing from the abdomen through the basin (pelvic cavity) and out at

the 'privates' (*vulva*), will be seen on examining the annexed diagram, Fig. 8.

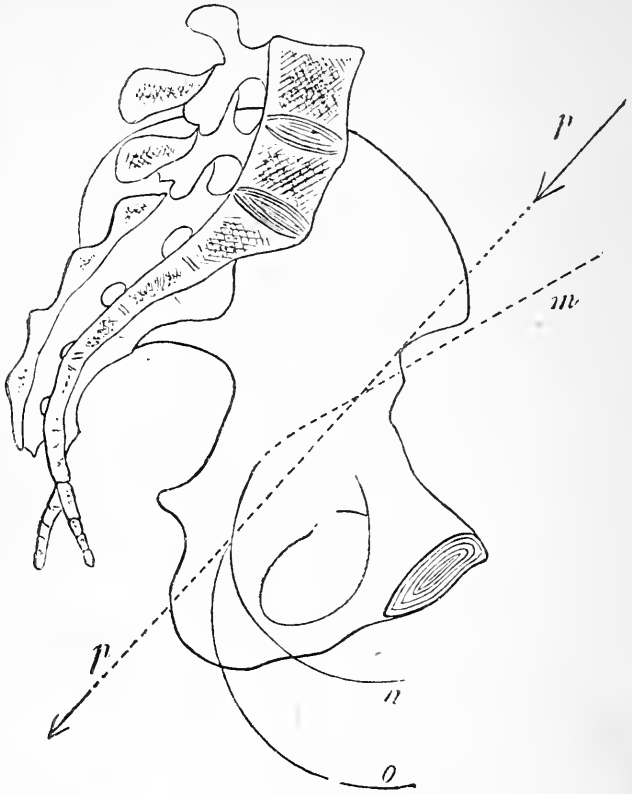


FIG. 8.

The line *p p* is drawn straight through the centre of the womb and of the 'basin' (*pelvis*). If then the soft parts which close in the 'outlet' of the basin, § 30, were removed, the child would pass along this straight line *p p*, but the resistance of the soft parts makes the child turn in the direction of the line *m n*, and when the tail-bone (*coccyx*) yields to the pressure of the advancing child the line of descent becomes *m o*. This curved line *m n*, *m o* describes the direction that the child must take at birth, and is called the 'line of descent,' or 'line of direction.'

CHAPTER III.

ORGANS OF GENERATION.

35. THE external organs of generation are included under one name, the PUDENDA, or the 'privates.' The opening or

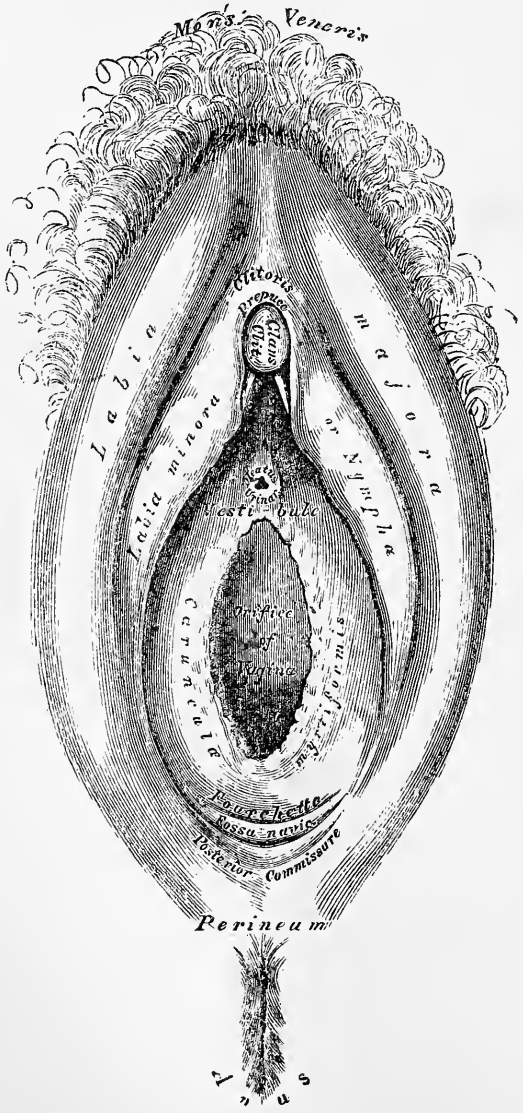


FIG. 9.

cleft is called the VULVA. The large lips are named the *labia*; on separating these two smaller folds the *nymphæ* appear, which at their union above nearly cover a small fleshy projection or tubercle, the *clitoris*; a little below this is the opening of the *urethra*, or canal that leads to the bladder, § 20. The urethra is from an inch to an inch and a half in length, and slightly curved from below upwards. The position of the mouth of the urethra should be carefully noted, as it is necessary, on some occasions, to pass an instrument, the catheter, along the urethra into the bladder for the purpose of drawing off the urine. Immediately below is the opening of the vagina; in the virgin this is partly closed by the *hymen*, a delicate semicircular fold of membrane usually ruptured on marriage. This membrane is, however, sometimes so tough as not to be torn even in labour, and sometimes closes the passage, requiring surgical aid to remove the obstacle. It may also be altogether absent.

36. Passing backwards from the 'privates' (vulva) is the PERINEUM. This bridge-like structure extends to the anus, it measures an inch and a quarter in its ordinary state, but when the child's head during birth is pressing upon it, is capable of extension to 3 or even 5 inches.

The ANUS is the circular opening into the bowel, and is a muscular structure capable of considerable dilatation and contraction. Behind this can be felt the tail-bone or coccyx.

Internal Organs.

37. The VAGINA, or FRONT PASSAGE, is a canal or tube about 4 or 5 inches long in the natural condition, and it is very distensible. In the healthy state the walls are closed together, and it thus forms a strong column of support to the womb. In certain states the walls become very relaxed, and, in consequence, the womb loses part of its support and is apt 'to fall.' To the fore-part of the upper wall or roof of the vagina, the urethra and bladder (§§ 20, 35) are attached;

farther back at about two-thirds of its length the neck of the womb projects into it. The surface of the vagina or 'front passage' in a healthy condition is only just moist, except during labour, when an abundant secretion of slime or *mucus* is poured forth to facilitate the passage of the child. A similar secretion is apt to become profuse in the unimpregnated condition, and is called the 'whites,' but the chief source of this unnatural discharge is the womb itself, and medical advice should be obtained.

Behind the vagina in the hollow of the cross-bone (*sacrum*) § 26 lies the rectum, or straight gut, § 20.

38. The Womb (*uterus*) in the virgin resembles in size

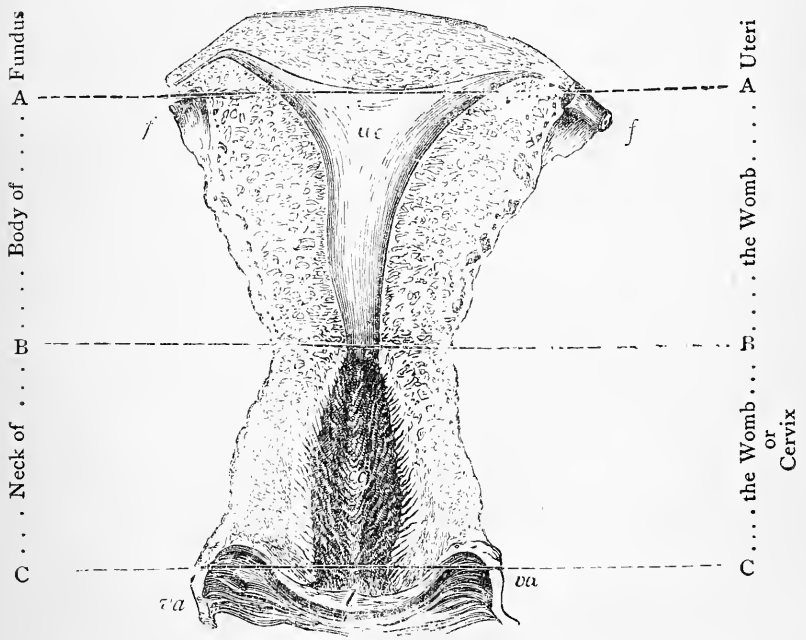


Fig. 10.—Vertical section of virgin uterus parallel with its anterior and posterior walls.

u c, uterine cavity; *c c*, cervical cavity or canal; *i*, internal os uteri; *l*, external os uteri or os cervicis; *f, f*, Fallopian tubes; *v a*, vagina. (Ad Nat.)

and shape a small flattened pear. It is about $2\frac{1}{2}$ inches in

length, 1 inch in thickness, and 2 inches in width, and weighs about an ounce. After child-bearing these dimensions are often permanently increased, so that the whole organ is larger and heavier than in the adult virgin. The bottom of the womb is called the *fundus*, the middle third is called the *body*, and the remainder is called the *neck* or *cervix*. In the centre of the body is a cavity that will contain an almond, lined by a mucous membrane, which during pregnancy becomes greatly thickened. From this cavity a small canal leads through the neck or cervix to the external mouth of the womb. There are also two minute openings near the fundus, which are continued through the Fallopian tubes.

39. The *Neck* of the womb (*cervix*) in a healthy woman who has never been a mother projects about three-quarters of an inch or for two-thirds of its total length into the 'front passage' or vagina, presenting a smooth conical surface, having a transverse or circular depression in its centre, the

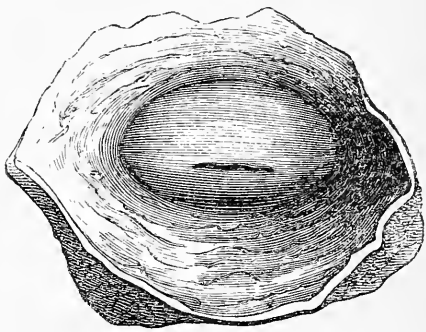


FIG. 11.—Os uteri, and vaginal portion of the cervix. Virgin. (Ad Nat.)

mouth of the womb (*os uteri* or *os cervicis*) with an anterior and a posterior lip. The opening will admit a large knitting needle or a quill. In women who have borne children the length and size of the neck *(cervix)* vary greatly; usually, it becomes thickened, and the orifice (*os cervicis*) is often notched and will perhaps admit the top of the forefinger.

40. The FALLOPIAN TUBES are two pipe-like fleshy canals which pass off from opposite sides of the bottom of the womb (*fundus uteri*); they are about four inches in length, and about the thickness of a crowquill; the passage through them will hardly admit a bristle. They end in a sort of trumpet-shaped mouth (*the pavilion* or *fimbriated*, that is, *fringed extremity*) which at certain times seizes the ovary in its grasp, and receives the 'ovum' or 'egg' which then passes along the Fallopian tube to the cavity of the womb.

41. The OVARIES (egg-receptacles, *ovaria*) are two fleshy bodies about the size and shape of a chestnut, which lie, half-encircled by their respective Fallopian tubes, a little behind and about half an inch away from the bottom of the womb (*fundus uteri*), one on each side of the womb to which they are connected by a ligament. Each ovary contains a number of vesicles in which the *ova* or 'eggs' are formed, and which, as they become ripe, fall into the mouth or 'pavilion' of the Fallopian tube to pass to the womb. The Fallopian tubes and ovaries are sometimes called '*the appendages*' *to the womb.*

42. The womb, Fallopian tubes and ovaries are supported in their position nearly mid-centre in the 'basin' or pelvic cavity § 23 chiefly by a membrane, the 'peritoneum' § 20 in which they are enveloped, and which is attached by its outer border to the soft parts lining the sides of the 'basin' (*pelvis*), and to the other viscera like a diaphragm. This membrane forms a broad fold on the right and left sides of the womb, and these folds are called the *broad ligaments*; it forms two narrower and more cord-like folds behind the womb which pass one on each side round the gut (rectum) to the cross-bone, and these are called the *utero-sacral ligaments*; two other less distinct and slighter folds pass in front between the womb and the bladder, and are called *utero-vesical* (or womb-bladder) ligaments. The bladder, womb and bowel are thus all tied together, and

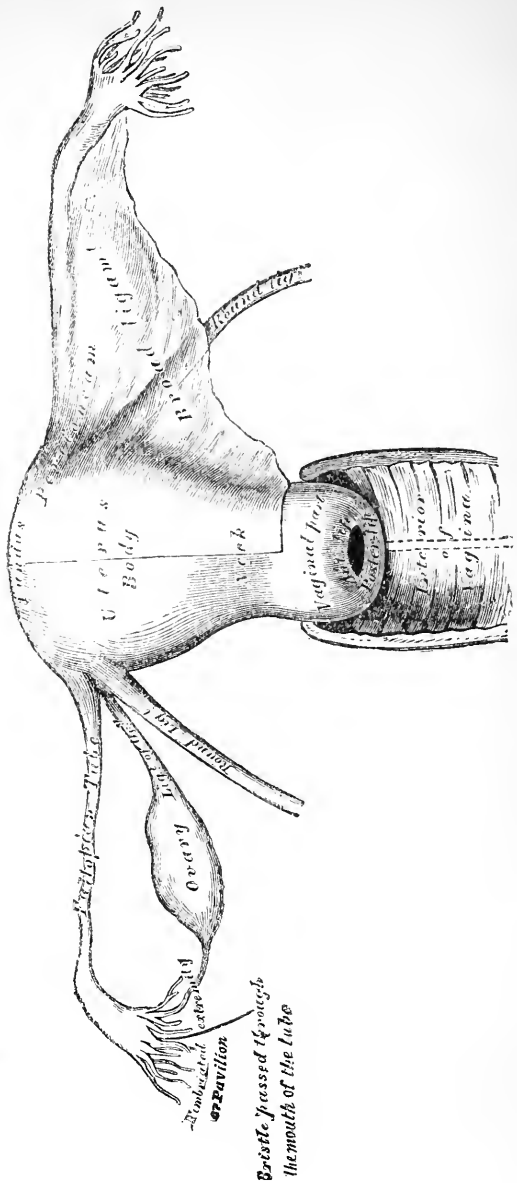


FIG. 12.—The Uterus and its Appendages. Anterior View.
(The peritoneum has been removed from the right half of the womb.)

consequently irritation or disease affecting one of these organs frequently involves one or both of the others. The womb is further upheld by the vagina. Two fleshy bands

called the *round ligaments* arise from each side of the womb a little below and in front of the Fallopian tubes and pass downwards to the groins.

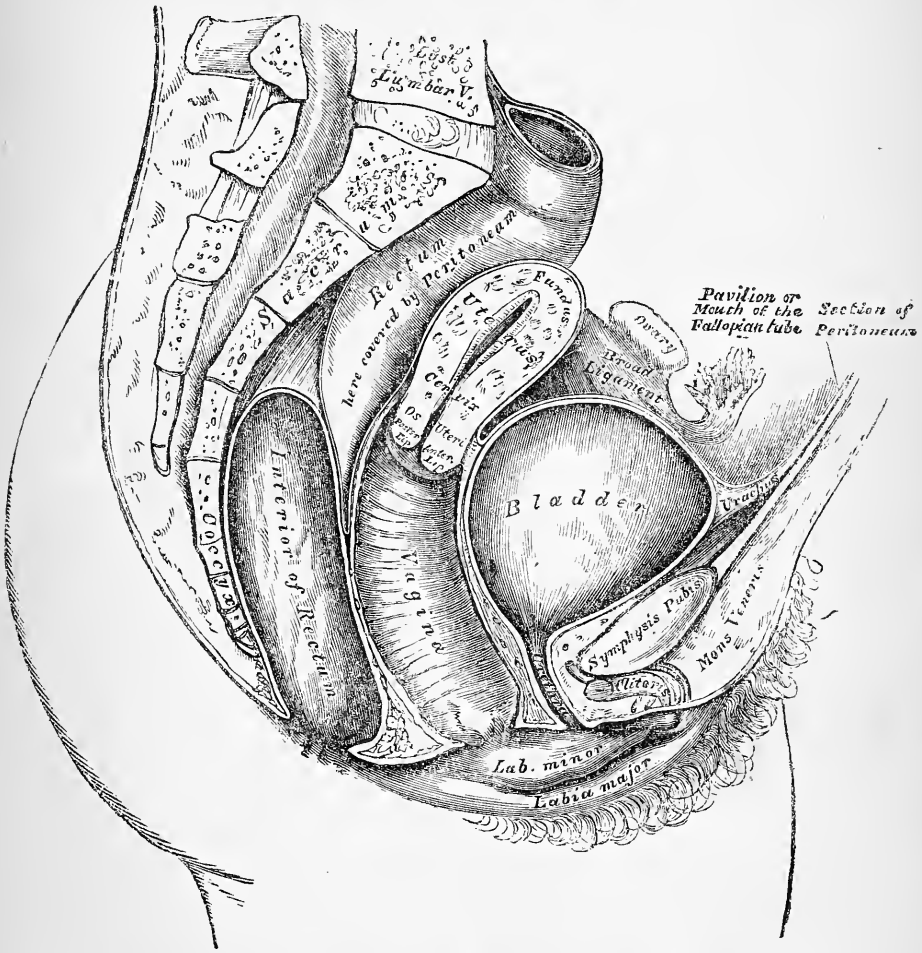


FIG. 13.—Pelvic Organs in position. Bladder distended. Womb virgin.

Puberty—Menstruation.

43. During infancy and childhood the breasts and organs of generation, both internal and external, remain undeveloped, but when the girl reaches the age of *puberty*, fourteen years or thereabouts, these organs take on growth,

enlarge, and gradually become mature, and fit to perform the functions of reproduction; the girl in the course of the next five years becomes an *adult* woman. The 'pubes,' or share-bone § 29 are covered with hair, the 'privates' (*pudenda*) § 41 alter in shape, the lips (*labia majora*) become softer and more prominent, and conceal the nymphæ (*labia minora*); the womb and vagina take the form described above.

44. MENSTRUATION.—About the age of fourteen a discharge of blood appears at the 'privates' or 'genitals.' There is a great difference as to the exact age when the girl is first 'unwell.' Some are so as early as twelve years of age, and some not till sixteen, or even much later, without any prejudice to their health. This appearance is usually, but not always, preceded by some general constitutional disturbance of the whole system; headache, pains in the loins, and a feeling of lassitude and heaviness are generally complained of. The discharge comes on gradually, continues for a few days and then gradually ceases, to reappear in about four weeks' time, and to continue with like intervals until the age of forty-five or thereabout is reached, when it finally disappears, and with it the power of child-bearing, with a few exceptions. The seat of this discharge of blood—known by various names, as 'the period,' 'the monthly courses,' 'the regulars,' 'menstruation,' 'the menses'—is the internal surface or cavity of the womb, and the cause of the discharge is the determination of blood to that part, stimulated by the excited condition of the ovaries, which at these times throw off one or more ova or eggs, which pass along the Fallopian tubes to the womb (*uterus*) and are lost in the discharge.

Should an ovum become impregnated, 'the courses' cease until it has passed from the womb, which then again becomes ready to receive and nourish a fresh ovum and its contents.

Cessation of the 'courses' or menses, if not caused by pregnancy or age, requires medical advice, as does any irregularity either in time of appearance or in the quantity or quality of the discharge; neglect lays the foundation of serious mischief.

PART II.

CHAPTER I.

PREGNANCY—THE OVUM—THE AFTER-BIRTH—THE FETUS.

45. By uterine pregnancy is to be understood the growth or development of an impregnated *ovum* in the womb. The time required for mature development from the date of fruitful intercourse is *about* 275 days or nine *calendar* months.

The exact day of 'confinement' cannot be predicted with certainty. Natural labour may come on a week earlier or a week later than is expected by the ordinary calculation.

If the day on which the last 'courses' disappeared is known, the midwife should take that same day nine months following and add to it *three* days, or, if the month of February be included in the reckoning, *five* days: this will give the middle day of the week in which the labour will most probably take place.—*Duncan.*

For example—if the last day of the 'courses' was the tenth of January, the fifteenth of October will be the middle day of that week in which the 'labour' may be expected; that is, the labour will *most probably* begin on some day from the twelfth to the eighteenth inclusive. If the last day of the 'courses' was the tenth of March, the thirteenth of December will be the middle day of the week of expectation, and the labour will *most probably* begin on some day from the tenth to the sixteenth inclusive.

46. When an ovum has become *impregnated*, the woman is said to have conceived, the lining membrane of the womb § 38 becomes greatly thickened, and is called the *decidua.*

The layer next the womb is termed the *uterine decidua*, that next the ovum is called the *ovular decidua*—fig. 16, *f, g*. In this thickened lining membrane, the ovum, on reaching the womb, becomes buried. The diagram, fig. 14, shows the walls of the uterus enlarged, the ovum attached to one side, which place will by-and-by be the seat of the after-birth

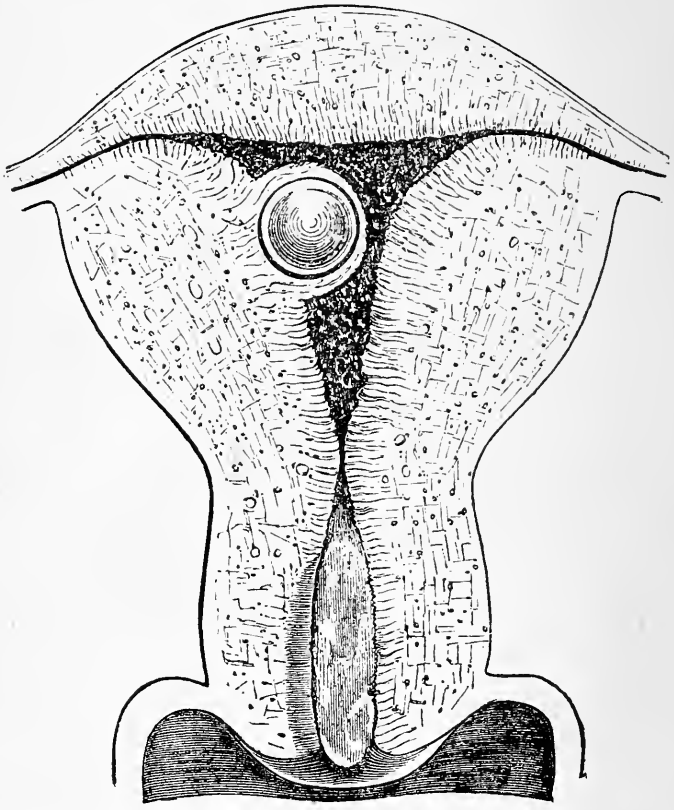


FIG. 14.—Diagram of section of Uterus, with an impregnated ovum attached. The cervix is closed with a plug of mucus.

(*placenta*) § 49, and the cervix or neck closed by a plug of mucus or slime. The womb daily increases in size and weight and, about the end of the twelfth week, becoming too large for the 'basin' or *pelvic cavity* § 25 rises into the abdominal cavity. About the sixteenth week the movements of the child are often felt, and the sensation so pro-

duced is called *quickening*, but, of course, life began at the moment of conception, and this occurrence is merely a stage in the growth.

The womb, when fully developed, encroaches on the space occupied by the stomach § 20, while the neck of the bladder is drawn upwards, often causing irritation and frequent desire to pass water.

47. If abortion occurs about the twelfth week, an examination of the ovum thrown off will show the *bag of membranes* § 48, which at this term nearly fills the cavity of the womb (*uterus*), but without distending it, the after-birth (*placenta*) at one side, and the embryo within measuring from five to six inches. At the fourth month the embryo is called a fetus, is from six to eight inches in length, and weighs from seven to eight ounces, fig. 16. At the seventh month, it measures from twelve and a half to fourteen inches, and is *viable*, that is, a child detached from the mother at that period may live. At the end of 'gestation,' or pregnancy of full time, the child ordinarily measures about twenty inches from the crown of the head to the heel, and weighs from six and a half to eight pounds.

48. The OVUM or '*bag of waters*' consists of two membranes and their contents. The outer of these membranes, itself covered by the lining membrane of the womb, the decidua, is called the chorion, and a portion of it is developed to form, together with a layer of the decidua, the placental cake or after-birth § 49; the inner membrane is called the amnion. The chorion and amnion which, during the early months, are quite separate, become 'at term' closely applied together, and are hardly separable, but it sometimes happens that spaces are left between them in which fluid forms, and occasionally passes away in gushes as 'the *false waters*.'

The WATERS (*liquor amnii*) are secreted by the internal surface of the amnion. Their office is to float the fetus, and protect it from injury, to assist in dilating the neck of the womb and to lubricate the passages during labour.

49. The PLACENTA (*After-birth—Secundines*) is a development or growth of a portion of the chorion. It consists of loops of blood-vessels which form tuft-like projections and interlock with somewhat similarly disposed blood-vessels formed in the lining membrane of the uterus—the decidua. The blood-vessels are collected together in bunches or lobes called cotyledons, held together on the uterine (womb) surface by a delicate tissue, which being readily broken, the cotyledons appear to be separated from each other by deep fissures or furrows, when the after-birth is expelled from the womb. The fetal side of the after-birth appears smooth, having the branches of the navel-string spread in all directions over it. Occasionally one or more lobes are developed separately from the general mass, and thus afford the appearance of two or more placental cakes.

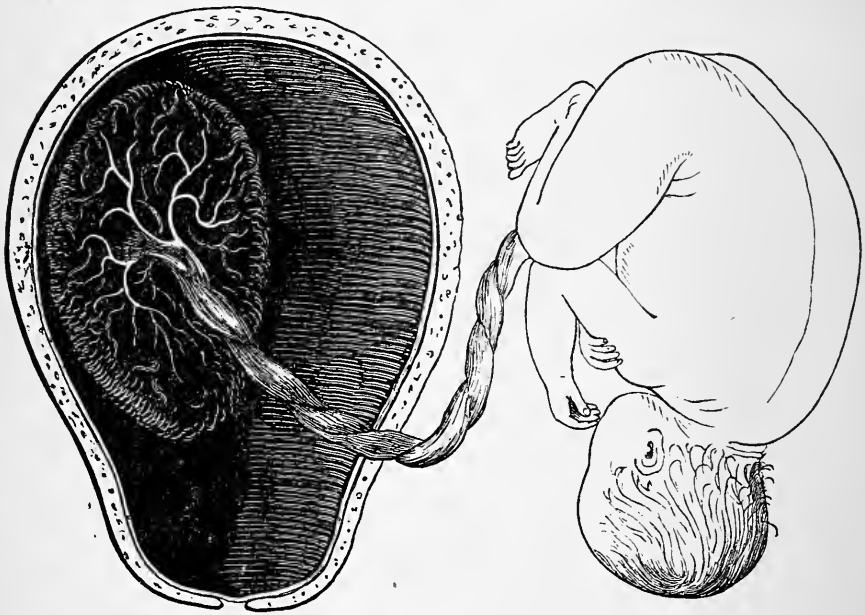


FIG. 15.

The after-birth (*placenta*) may be attached to any part of the womb. It is perhaps most frequently applied to the posterior surface of the body of the womb, but is sometimes

found at the very bottom (*fundus*) § 38, more rarely towards the neck, and still more seldom over the mouth itself, in which last case its position must necessarily give rise to much loss of blood when the orifice opens in labour. 'Its attachment is by simple *apposition*; there is no *adhesion* in the natural condition of the parts, and whenever actual union does take place, it is the consequence of diseased action. The circumference of the placenta is usually about 25 inches, and the weight about a pound, but there is considerable variation both in size and weight.'—*Ramsbotham.*

50. The blood of the fetus or child circulates through the after-birth (*placenta*), and undergoes the changes necessary for life by exposure to the maternal blood just as the blood becomes purified in the lungs by the action of the air upon it. The blood of the mother and child do not directly mix together in the placenta, as the two fluids are always separated by the walls of the blood-vessels.

51. Navel-string.—The connection between the after-birth (*placenta*) and the child is by means of the *navel-string* (umbilical cord, *funis*), which consists of a vein and two arteries, held together by an intermediate gelatinous substance. The blood passes from the after-birth along the vein to the viscera § 20 of the child, and having circulated through its body returns again to the after-birth along the arteries. The length of the cord at term varies greatly; generally it is about 22 inches; it may, however, be some feet in length, and has also been found only a few inches long, so that the child and after-birth seemed closely attached together. Knots sometimes occur in it. It is usually inserted about the middle of the after-birth, but sometimes at the edge, forming the so-called *battledore* placenta. It is not unfrequently twisted once or twice round the neck of the child, § 171.

The drawing Fig. 16 shows an ovum that has been removed from the womb about the fourth month of conception. The front layer of decidua has been opened and turned back to

show the arrangement of the parts ; *b b* is the amnion, which has been purposely separated from the chorion ; *c c* is the chorion which at *d d* is developed together with the decidua

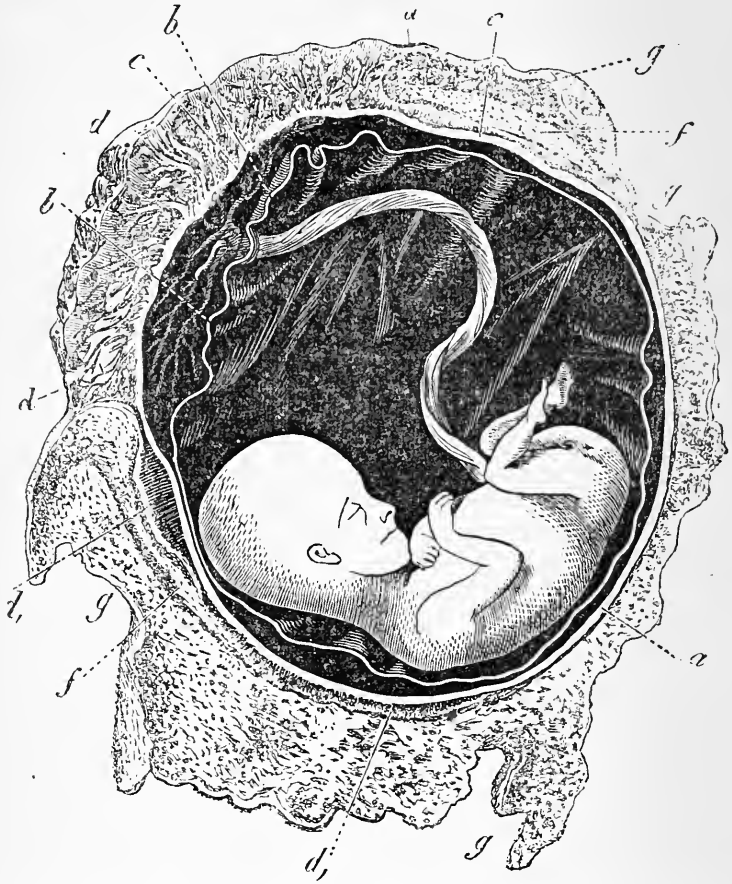


FIG. 16.—*a*, fetus ; *b b*, amnion ; *c c*, chorion ; *d d*, placenta ; *f*, ovular layer of decidua ; *g*, uterine layer of decidua.

into the placental cake, but at *d*, *d*, is smooth and undeveloped ; *f f* is the layer of decidua next to the ovum ; *g g* is the layer of decidua next to the womb, and called the uterine decidua. The body is about six to eight inches in length ; eyes, ears and nose, neck, arms and legs, are developed. The navel-string is long and twisted. The sex can now be distinguished.

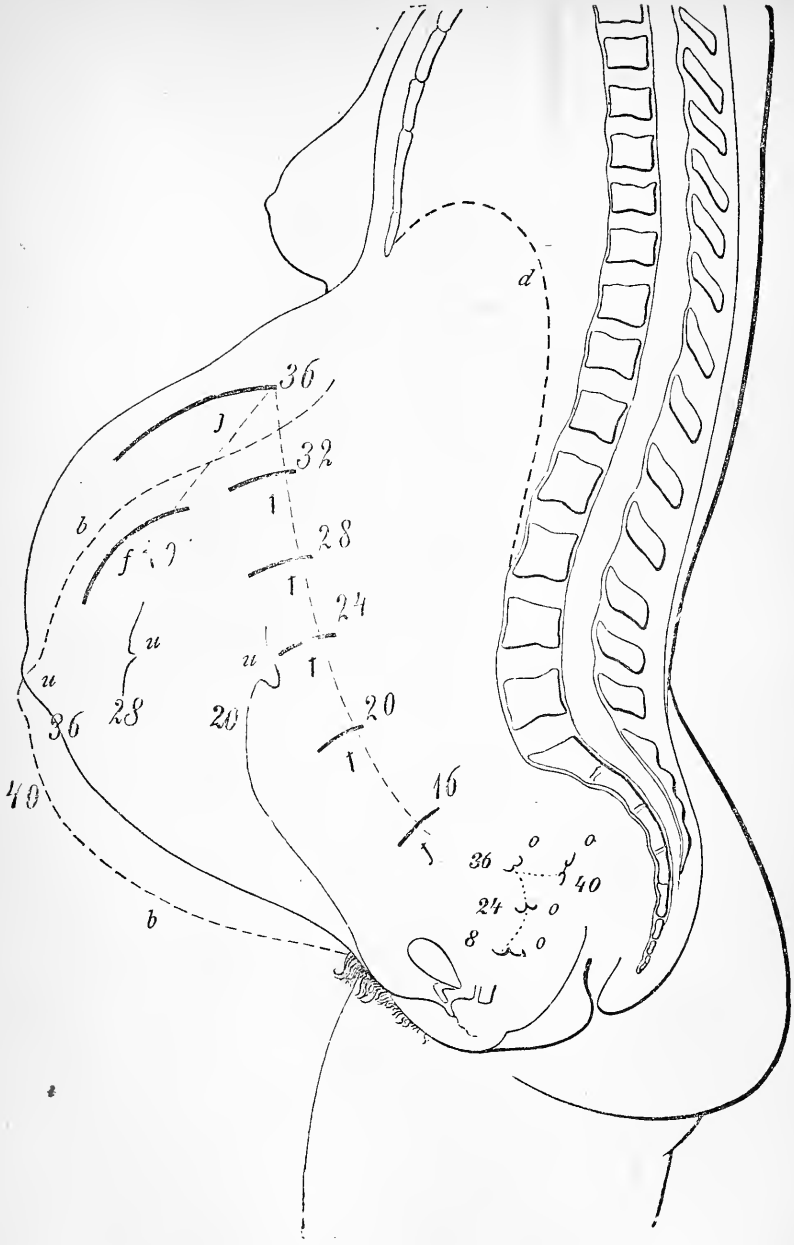


FIG. 17.—The figs. are the number of weeks of pregnancy; *ooooo* show the shape of the 'os' and its position in the vagina at the various periods; *fffffff* show the level of the fundus uteri at the various periods; *u u u* show the umbilicus or navel; *d* is the diaphragm: *b* is the dotted outline of the belly during the last month.

CHAPTER II.

THE SIGNS OF PREGNANCY—TWIN PREGNANCY—EXTRA UTERINE PREGNANCY.

52. THE gradual growth of the womb during pregnancy causes it to assume different positions in relation to the 'basin' (*pelvis*) and abdomen. The neck (*cervix*) § 39 alters in its position in the vagina or 'front passage,' in its shape and in its firmness.

The signs thus furnished can be recognised by a careful examination of the abdomen externally and by the vagina internally §§ 72, 73, and thus a tolerably certain opinion arrived at as to 'how far' a woman is 'gone in the family way.'

Fig. 17 shows the height of the womb (*fundus uteri*), the position of the neck, and the projection of the navel (*umbilicus*) at different epochs of a first pregnancy.

By repeated childbearing the belly becomes relaxed, the fundus uteri then remains at a lower level, and the belly projects more than is here shown.

After four weeks, in a first pregnancy, the neck of the womb (*cervix*) feels to the touch thicker and rounder, and comes lower and more forward in the vagina or 'passage.'

After eight weeks the neck is still more readily felt, and therefore seems to be lengthened, while the body of the womb becomes palpable behind it, heavy and enlarged.

After twelve weeks the neck is found higher and inclined backwards, and therefore seems to be shortened, and in those who are already mothers the orifice will admit the top of the finger. The enlarging womb is now felt also in front of the neck, the vaginal walls seem looser or more flaccid, and exhibit a dark colour as though stained with port wine. This colour is due to congestion of the blood in the veins, which sometimes increases until the veins become dilated and varicose. In the same way the veins in the upper part of the thigh and about the '*anus*' § 36 (piles), especially in

women whose flesh is flabby and who suffer from constipation, and in those who have had many children, are apt to become knotty or varicose, and may require surgical aid. The descent of the womb at this time often causes troublesome symptoms of pressure or cramp, difficulty in passing urine or a frequent desire to do so, urgent calls to stool without result.

After sixteen weeks the neck mounts higher, and is often directed towards the left side, while the bottom of the womb (*fundus*) rises above the share-bone or pubes, and inclines to the right side. The breasts feel harder and fuller, are often tender to pressure; the nipple becomes more prominent and erect, the circle around it (*areola*) becomes darker, and some moisture often oozes from its surface.

After twenty weeks the neck mounts still higher, the bottom of the womb (*fundus*) reaches about midway between the share-bone (*pubes*) and the navel. If the ear is applied to the belly, a peculiar rushing sound can be heard over the part where the after-birth (*placenta*) is attached to the womb, called the *placental sound* or *bruit*. It is, however, produced in the walls of the womb, and not in the after-birth.

After twenty-four weeks the neck is so high as to be difficult to reach with the finger; the fundus or bottom of the womb is about a finger's breadth above the navel; the placental sound is more distinct, and the movements of the child can be felt by the hand laid on the abdomen. These movements are more readily produced if the hand is cold.

After twenty-eight weeks the fundus is about two inches above the navel, the plaits of which begin to unfold. The womb becomes broader towards the neck, which, from being drawn upwards, feels much shortened. The orifice (*os cervicis*) feels like a shallow pit, but in women who have had several children the opening feels like that of a thimble. The head of the child can be felt through the walls of the womb in front of the neck, and can be made to bob away or rebound from the touch. This bobbing is called '*ballottement.*' If the ear be applied to the belly of the mother—

either directly or by means of a stethoscope—the heart of the child can now be heard to beat, usually at the left side of the mother, and about midway between the navel and the share-bone (*pubes*). The beats are at the rate of 120 to 140 per minute, and quite distinct from the pulse of the mother.

After thirty-six weeks the neck feels as soft as the vaginal wall, and is often shortened to a mere ring. The membranes even may be felt through the orifice in those who have previously borne several children. The fundus, or bottom of the womb, reaches to the pit of the stomach, and is usually inclined towards the right side. The navel pouts, and reddish lines or streaks show themselves on the belly, caused by the excessive stretching of the skin.

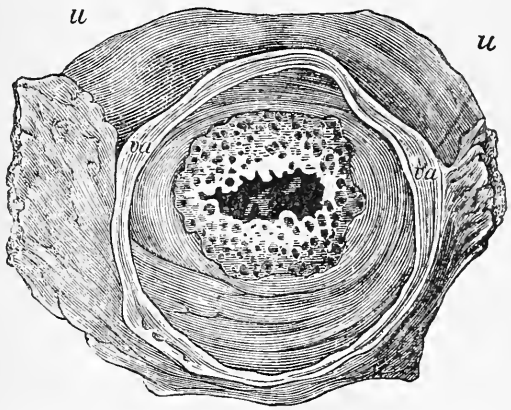


FIG. 18.—Os and cervix uteri in the eighth month of pregnancy.

The os is surrounded by a broad disc of enlarged cervical follicles filled with a gelatinous secretion. The os is represented as seen from the vagina. *v a*, vaginal walls divided; *u*, walls of uterus. Half the natural size. (Ad Nat.)

From the thirty-seventh week to the end of the pregnancy the neck descends again, but points backwards. The fundus, or bottom of the womb, has also fallen, and reaches only as high as in the thirtieth week. The belly appears *flatter*, while the hand can readily pass behind the womb, from the slackness of the abdominal walls.

53. The foregoing signs are called the *sensible* signs of pregnancy, and besides these, certain other signs are manifested, called the *rational* signs of pregnancy.

During the first and second months the 'courses' (menses) are absent, though there are many exceptions to this rule. There is nausea and vomiting. The breasts swell and are tender.

During the third and fourth months the 'courses' are absent, with few exceptions. The vomitings often continue. The breasts are more swelled, with prominence of the nipple and slight discolouration of the areola § 16.

During the fifth and sixth months the courses are absent, with very rare exceptions. The sickness and vomitings usually disappear. There is a floating rounded prominent tumour or swelling in the abdomen. The navel is almost effaced. The areola of the breast is darkened, and small tubercles appear around it.

During the seventh and eighth months the 'courses' are absent. The vomitings have ceased, with very rare exceptions. The navel begins to pout. The tumour is larger and higher in the abdomen. The areola of the breast is darker, and a flow of milk often takes place.

During the first fortnight of the ninth month the vomiting frequently reappears. The abdomen is very tense. Breathing is often embarrassed.

During the last fortnight the vomiting often ceases. The abdomen has fallen. The breathing is easier. Walking is difficult. There is frequent desire to pass water. Piles, pains in the loins, and colic are often complained of.

Twins.

54. The womb may contain two or more fetuses. When there are twins the abdomen is ordinarily larger than with one child, and generally flattened along the middle line. Should both present by the head, Fig. 19, the fundus will be much dilated, and the contrary will happen if they both present by the breech ; or one may present by the head and the other by the breech, Fig. 20. The movements will depend on the size of the children and the quantity of 'the waters' present. It may happen that when two ova have been impregnated one slips away from the womb during the first month, or even

later, and the growth of the other continues; so that although the female thinks she has had a miscarriage, she may yet go

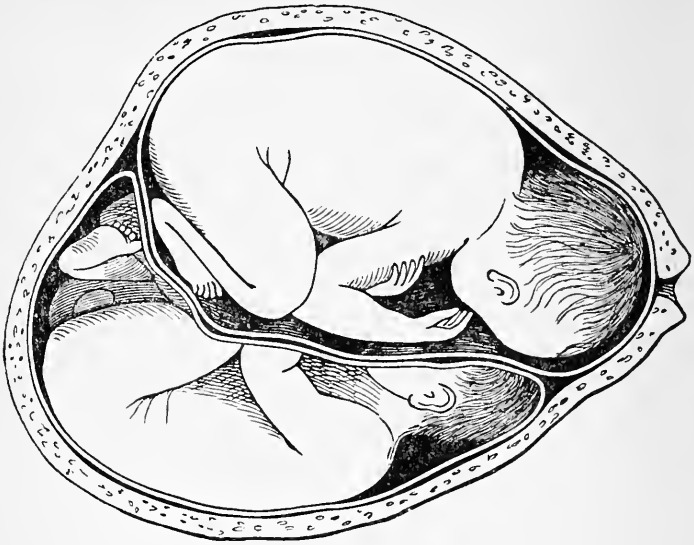


FIG. 19.—Twins both 'presenting' by the head.

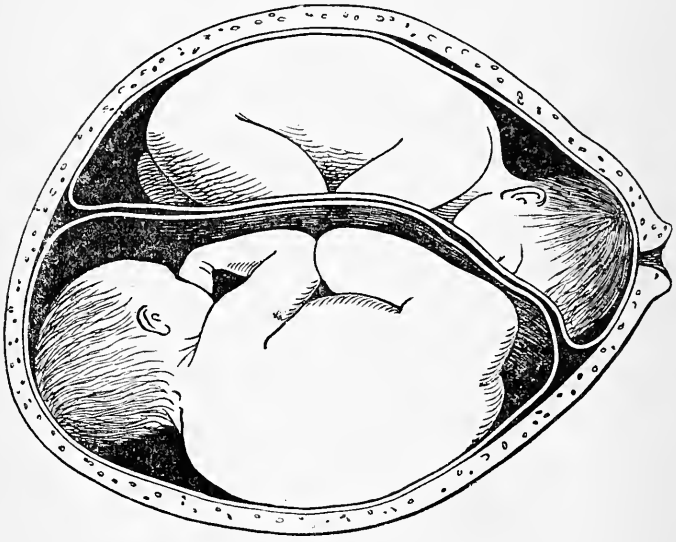


FIG. 20.—Twins. One 'presents' by the head, the other by the breech.

her full time with the survivor. Generally the ova are distinct, but there may be two children in one bag, and then

there will be only one after-birth; or there may be two amnions and one chorion.

Extra-Uterine Pregnancy.

55. In very rare cases the ovum does not descend into the womb, but is developed in some portion of one of the Fallopian tubes, or in an ovary. The signs of pregnancy go on for some months, and may even extend to full term, according to the locality of the growth. If the pregnancy continues so long, the woman falls ill, but the labour does not take place, and, on examination, the womb is found not to have undergone the usual changes, while a tumour or swelling is perceptible closely connected with the womb. Often the tumour bursts, and the woman dies either of internal hæmorrhage or of inflammation. It may happen that the child decays and is discharged piecemeal by a wound that forms over the swelling, or even through the bowel or vagina, or it may remain for years in the belly. If there is any suspicion that the pregnancy is irregular, the accoucheur must be consulted as early as possible.

CHAPTER III.

GENERAL DIRECTIONS TO BE OBSERVED DURING PREGNANCY —EXAMINATION, EXTERNAL AND INTERNAL.

56. Pregnancy being a natural condition, the general manner of living, if healthy, need not be altered in ordinary cases. Hard manual work is not prejudicial, provided care is taken not to lift heavy weights, nor to strain the body, especially when in a crouching or squatting posture. Rest must be taken at intervals when long standing causes pain in the back or the legs to swell; but if the person is exposed to sudden shaking or jolting from jumping, or missing

a step when going down stairs, from running, or from riding in a rough vehicle or on the railroad, especially over long distances, the womb is apt to be excited to premature action, with consequent abortion or miscarriage, or it may be displaced § 64, or injured, and inflammation may follow.

As the difficulties and danger of any disease are greatly increased if it occurs during pregnancy, any unhealthy pursuit should be discontinued, and special attention paid to live in fresh air, and observe habits of cleanliness.

Fresh air and cleanliness are absolutely necessary to keep the body in such a healthy state, that it is not apt to take contagious or infectious disease, as scarlatina, small pox, fever, &c., and, in cases of inflammatory disease, as of the lungs, &c., that it can bear up against their effects; on the other hand, exposure to draughts of cold air and to wet, especially if combined with fatigue, is to be carefully avoided.

57. The smallest room may be kept pure by means of an open window and a little fire, and the largest and most luxuriously-fitted apartment becomes merely a pest-room if ventilation is not attended to.

The bed and clothes should always be thrown open, so as to allow the fresh air to purify them after the night's sleep. All dirty water, and especially 'slops' of all kinds, must be removed with as little delay as possible. The floor should be scrubbed, and no dirt be allowed to accumulate. A room which smells 'close' to a person entering from the outer air is dangerous for a pregnant woman to live in. Dust-bins, and the like, should be emptied, or have some disinfectant, as chloralum, carbolic powder, &c., § 154, spread over the heap, and some similar appliance should be used to any foul-smelling sink or privy.

58. Personal cleanliness is equally necessary. The whole body, particularly at the joints and folds of the skin, should be washed daily with warm soap and water and a flannel. The linen worn next the skin during the day should never be slept in.

The clothing should be warm and easy. Drawers should always be worn, especially during the latter months when the lower part of the body is more exposed to cold draughts. The stays, if worn, should be enlarged by the insertion of a gore of elastic in each side, and if there is a steel in front it should be removed.

59. The breasts must have plenty of room, and if tender, must be supported either by wadding in the stays, or, if necessary, by strapping-plaster, or by a bandage passed under the breast and across the opposite shoulder. See § 71.

60. If the legs swell and the veins enlarge, garters must be left off. In extreme cases it may be advisable to wear an elastic stocking. If swelling of the feet, ancles, face, or other parts of the body takes place, so that they 'pit' on pressure, or take the impression of a finger, medical aid should be sought at once, as such dropsical symptom may be significant of internal disease, even leading to convulsions § 179.

61. The food requires no alteration in its usual quality and quantity. What is called 'longing' is simply a caprice that no sensible woman will indulge, if it be for any absurdity in diet, and the withholding such a gratification will not interfere with the condition of the pregnancy or of the offspring.

If the sickness usual during the early months is troublesome, food should be taken in less quantity at a time, but more frequently. If the sickness is excessive, although the bowels are open, and is not quieted by an effervescent mixture, as the citrate of magnesia, or by a teaspoonful of brandy in a little cold water, or by swallowing small lumps of ice, or by a mustard poultice to the pit of the stomach, and the general health is beginning to suffer, medical aid must be resorted to.

62. The state of the bowels must be attended to, and any tendency to irregular action stopped. If they are confined, a clyster of warm soap and water, or a tablespoonful of olive oil in a pint and a half of thin gruel, should be injected into the bowel § 152, and an occasional dose (a tablespoonful) of

castor oil be given, and repeated in six hours' time, or a rhubarb draught; if necessary, the patient must remain in bed, take no solid food, but strong beef tea and milk, in small quantities and only lukewarm. She can drink barley-water, thin gruel, toast-water, &c. if thirsty. If these means are insufficient to restore healthy action, medical aid must be resorted to, and especially if the irregularity is accompanied by pain, or straining, or feverish symptoms.

Stoppage of the bowels may be due to a 'rupture' or protrusion of the bowel from the belly, which, if unrelieved, will endanger life. The rupture or hernia is usually found at one of the groins, forming a small lump which gradually becomes tender. At the same time there is sickness and vomiting which becomes increasingly urgent. The constipation may arise from or give rise to internal inflammation, especially if strong purgatives are used.

Diarrhœa may excite action of the womb and consequent abortion or premature labour, or may reduce the general health so that the peril of childbirth is immensely increased.

63. A too frequent desire to pass water (*dysuria*) is often relieved by the patient lying on her back for a time. In the early months of pregnancy it is often caused by the vagina dragging on the neck of the bladder as the womb rises, in the last month by the pressure of the womb when it descends in the 'basin' (*pelvis*).

If the urine scalds, let the patient drink plentifully of linseed tea or barley-water, to a pint of which a tea-spoonful of cream of tartar may be added. Warm fomentations to the privates (*pudenda*) § 41 often give great relief.

64. When the urine does not pass, the cause may be *displacement of the womb*, and this is a most serious occurrence. It usually occurs before the end of the third month, and often after a strain, as when an attempt is made to reach something overhead, or a false step is made. Examination will detect the position of the womb, which now fills up the hollow of the cross-bone (*sacrum*). The whole womb

may be turned backwards,—retroverted,—or it may be bent back from the neck,—retroflected. The accompanying figures show the two conditions.

The accoucheur must be called in without delay, as labour will probably come on or the life be endangered. In the meantime the patient should be kept quiet in bed. If the

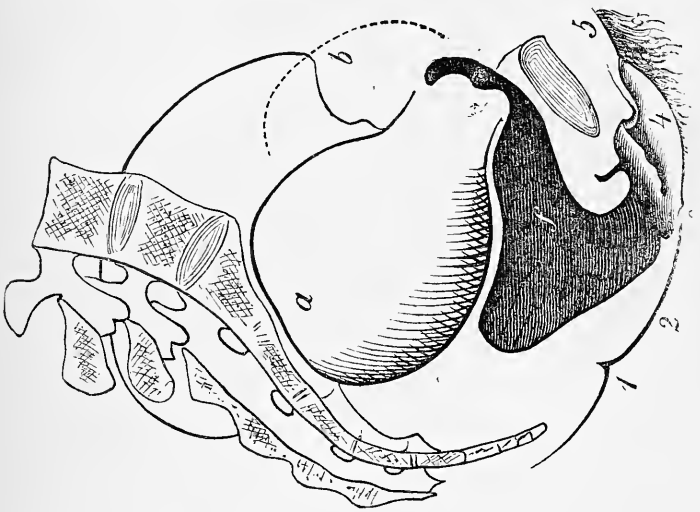


FIG. 21.—Retroversion of the womb.

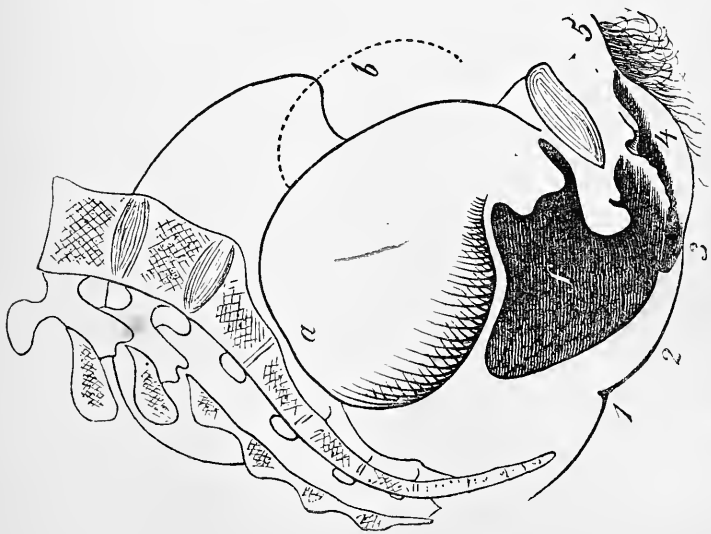


FIG. 22.—Retroflection of the womb.

The figures show a section of the pelvis:—1, the anus; 2, the perineum; 3, the fourchette; 4, the left large lip (labium majus); 5, the pubes; *f*, the vagina distended by the examining finger; *a*, the fundus of the womb; *b*, the dotted line showing the proper place of the womb.

midwife is skilful in the use of the catheter, § 153, she may attempt *very cautiously* to pass it, but the operation under these conditions is often difficult, and unskilful meddling with the parts makes them swell so that the surgeon has more difficulty when he arrives than if no attempt had been previously made by the midwife.

65. Falling of the womb or of the 'front passage' (*prolapsus uteri* or *vaginæ*) requires surgical treatment. If pregnancy occurs in a person thus suffering she must be very careful of herself during the first four months, as the womb may, on straining, even come outside.

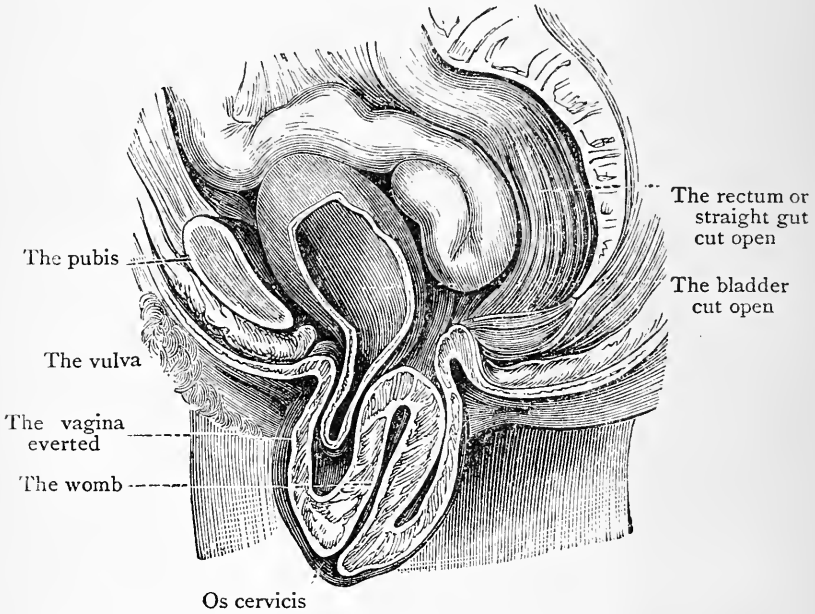


Fig. 23.—Extreme prolapsus of womb and vagina, the latter being completely everted or turned inside out.

The womb is apt also to become jammed in the cavity of the pelvis or 'basin,' § 23, causing stoppage of the bowels and of the water. Should such accident occur, the patient must be kept in bed, the buttocks raised, and a clyster be administered to empty the bowels, and the catheter used, if

necessary, to empty the bladder. Then by gentle pressure with the tops of the fingers the womb may be replaced into its proper position, taking care to make the pressure in the direction of the line of descent, § 34. If the first attempt does not succeed, the accoucheur must be called in, as the mother and fetus are both in danger. If the womb has fallen so low as to be outside the body, warm wet napkins may be applied until he arrives. The patient should until the womb has quite risen out of the 'basin' (*pelvis*), that is until at least four months are passed, lie down the most part of the day, and not strain at stool or in passing water, the bowels being kept loose. No pessary can be used to keep up the womb, as the irritation would be likely to bring on labour.

66. If only the vagina 'falls' the parts must be kept clean and well bathed to prevent soreness from rubbing and chafing. The patient so suffering is often obliged to press back the protruding parts with her hand before she can pass her urine, or to make water supported on her hands and knees.

67. *Pendulous belly.*—When the walls of the belly are very weak and lax, as occurs in some women, and generally those who have had many children, the body of the womb in the latter months of pregnancy falls forwards, causing great inconvenience, walking becomes difficult, the neck of the bladder is apt to be so pressed upon that passing the urine is difficult, and sometimes can only be accomplished by the woman when lying on her back. It not unfrequently happens in these cases that the 'basin' (*pelvis*) is contracted, § 212, and the womb then falls the more forwards, its base of support being narrower than ordinary.

Sometimes the belly appears to separate along the middle line, showing a deep groove when the belly is drawn in. This weakness is very inconvenient during the second stage of labour, § 138, as the woman loses her power of bearing down. The only remedy is to wear an abdominal belt,

which can be obtained at a bandage maker's, or a belt can be made of stout jean, but the elastic belts are preferable.

If the 'basin' (*pelvis*) is supposed to be contracted an accoucheur should be consulted without delay. See § 211.

Some women suffer from rupture at the navel (*umbilical hernia*), the bowel coming out under the skin to a very considerable extent. The surgeon must be consulted.

68. Whites (*leucorrhœa*) are frequently suffered from during pregnancy, and especially in the latter months. The discharge comes from the glands in the neck of the womb, fig. 18, and from the 'front passage' (*vagina*). This state calls for increased cleanliness and frequent bathing with lukewarm water. In the early months the vaginal syringe may be used, but cautiously, and with great gentleness, taking care that the stream of water is not directed against the neck of the womb for fear of bringing on contraction of the womb, and consequent abortion or miscarriage. A tea-spoonful of Goulard's water may be mixed with a pint of warm water and used as an injection.

If an internal examination be made the upper part of the 'front passage' (*vagina*) is often felt to be harsh and gritty; this is not disease, and requires no treatment. But if there be pain, if the vagina is tender and hot to the touch, or if there are any sores, or swellings, or warty patches, either on the external or internal parts, surgical advice must be sought, as contagious disease may be present.

69. Whenever the state of health is such as to require more treatment than is here prescribed medical advice should be taken without delay. Very serious illness may commence by symptoms apparently insignificant, and the foundation of long-continued disease is often laid by neglect of early precautions.

70. When the midwife is consulted by a pregnant woman it is always advisable to make an examination. It often happens that important information may thus be obtained, by which serious mischief can be averted. For example,

the 'basin' (*pelvis*) may be deformed, either from defect of development, or from disease, or a tumour, §§ 211, 212, may have grown, which will interfere with childbirth, though the woman may herself be in ignorance of it.

71. The Breasts should be looked to, § 59. The nipples in those who have never suckled are sometimes small and undeveloped; in such case they should be gently drawn out with the finger and thumb once or twice a day for some time previous to the labour. If the nipples are tender they must be washed daily, carefully dried, and then bathed with equal parts of brandy and water, or strong green tea with or without brandy. If this is not sufficient, medical aid must be sought,—a chapped nipple is frequently the origin of a bad breast.

Examination of the Womb external and internal.

72. For the external examination the patient should lie upon a hard mattress on her back, covered only by a sheet, the legs being drawn up and the thighs allowed to lie open in as easy a position as possible, in order to relax the belly; she must breathe gently with the mouth open, and take care not to strain nor make the belly hard or tense.

The flat hand should be laid on the belly, not the tips of the fingers, and any mass should be embraced with both hands so as to note its shape and position. If any unusual swelling or any tenderness, or pain on pressure be detected an accoucheur must be summoned.

73. For the internal examination the woman should lie on her left side, the body being placed obliquely across the bed and the head resting on a pillow. The hips must be brought to the edge of the bed and slightly raised, while the thighs and legs are bent up towards the belly as much as possible. The right forefinger, having the nail cut short and being well soaped or anointed with oil or lard, § 167, must be introduced gently into the 'front passage' (*vagina*), the other fingers being shut upon the palm.

The state of the vagina must be noted as to its moistness, heat, and sensitiveness, then the cervix or neck of the womb must be felt; if healthy it is not tender to the touch, and the surface is smooth; its length and softness depend upon the stage of pregnancy, as does also the size of the womb, § 52.

74. In a well-formed 'basin' (*pelvis*), the finger can only with great difficulty touch the promontory of the sacrum, § 32, as it is almost out of reach. If, however, it is readily touched, if the seat-bones (*ischia*), § 28, approach each other so nearly that the closed fist would not easily pass between them; if the arch of the pubes, § 29, is narrowed, if one side of the pelvis is of a different shape to the other side, if any projecting lump is felt, § 212, some deformity or disease is present and skilled advice must be sought without delay, as also if there is any deviation from the healthy condition in the soft parts, 'front passage' (*vagina*), neck (*cervix*), or body of the womb.

75. On making the examination in the last months of pregnancy, there may be some difficulty in reaching the neck of the womb (*cervix*), when it happens to be directed far backwards, and especially when the fetal head is pressing down, for then the thinned wall of the womb may possibly be mistaken for the head itself, and the labour itself supposed to be far advanced, but this mistake cannot occur if the midwife recollects that if she is touching the external surface of the womb her finger cannot pass between it and the head, while if the neck (*cervix*) is widely open the finger can mark its circular ring-like edge. The midwife should insert the tip of the finger into the mouth of the womb, and can always succeed in doing so by using the left hand instead of the right. For this purpose she should seat herself at the foot of and behind the patient, and pass the two first fingers of the left hand up the 'front passage' (*vagina*), while she steadies the womb externally with her right hand passed between the legs of the patient.

CHAPTER IV.

ON HÆMORRHAGE DURING PREGNANCY, ABORTION AND MISCARRIAGE—PLACENTA PRÆVIA.

76. THE symptoms of serious *hæmorrhage* or 'loss of blood,' occurring in any part of the body, are a feeling of lassitude, then of oppression, anxiety, and a want of air; the patient becomes faint, experiences a buzzing in the ears, and a beating like a hammer in the head, with nausea, vomiting, loss of sight and of consciousness; the skin becomes of a leaden waxlike hue, the eyes sunken, the pulse small, frequent, and at last imperceptible, the hands and feet get cold, and the body is bathed in a clammy sweat; sighing respiration, and jerking of the limbs, usher in death.

If the hæmorrhage is very rapid, all the symptoms may run their course in a few minutes, or some be passed over. If the hæmorrhage is intermittent, the symptoms will abate to appear again on a fresh loss of blood: or the hæmorrhage may cease and the patient recover.

The hæmorrhage may be slow but persistent, and although apparently not formidable, yet by its continuance lead to a fatal issue.

77. Hæmorrhage or bleeding is said to be *external* when it appears outwardly; *internal* when it takes place into some cavity as into the belly, or into the womb after a birth, § 175, and does not flow outside.

If the cause be rupture of some blood vessel or of the substance of the womb, the patient experiences a sudden pain as though from a blow, followed by the sensations as if something had given way inside and of a gush of warm fluid; the belly swells up, becomes tender, and the symptoms detailed above follow.

If hæmorrhage or bleeding exists, the midwife must apply

ice cold cloths to the belly and 'privates,' and send for the accoucheur.

78. *External hæmorrhage*, or a flow of blood from 'the genitals' appearing *outwardly*, may originate from the 'privates' (*pudenda*), § 35, through bursting of a blood vessel, either spontaneously, § 169, or after a blow or injury, as from sitting on a broken chamber pot. The midwife should try and staunch the bleeding by pressure until the accoucheur can arrive.

Or the hæmorrhage may proceed from the womb, being caused by disease, as cancer, or by rupture of a vessel in the neck.

Or the blood may come from the lining membrane of the womb, as in natural menstruation § 44. In this case, it being apparently periodical, the woman may not consult any one, not thinking that she is pregnant, but such extraordinary menstruation is infrequent, and after the third month very rare : see § 53.

79. Or the hæmorrhage may be the result of partial detachment of the after-birth (*placenta*), § 49. When this occurs in the early months of pregnancy it is called *accidental* hæmorrhage.

Now, owing to the intimate relations between the after-birth (*placenta*) and the contents of the ovum, loss of blood may endanger the life of the fetus, and consequently induce interruption of pregnancy; for, as a rule, when the fetus dies the womb begins to contract in order to expel what has become a foreign body.

80. Expulsion of the fetus up to the twelfth week is called *abortion*; after that period and up to the twenty-eighth week, *miscarriage*; after that time and up to the fortieth week, *premature birth*; but these terms are not always strictly adhered to, the word 'miscarriage' being often applied to any birth occurring short of full time.

This occurrence may be brought about by causes acting directly on the mother or on the fetus; such are severe or continued shaking (on railroad journeys, &c.) of the body,

strains, blows, pressure, chills; excess in eating, drinking, venery; mental emotions, rage, joy, fear, &c.; illness affecting the general health, as fevers, contagious diseases, &c.; diseases of the womb, tumours, &c., and violent purging medicines, &c.

81. Contraction of the womb (*Labour*), § 105, may commence and go on unknown to the mother, and if the womb is small, be imperceptible to the hand laid upon the belly, § 106.

The first sign of approaching 'abortion' is hæmorrhage; after this has occurred for some days the ovum, § 46, often passes unnoticed in the clots and without any 'pains,' § 106, having been felt. Miscarriage is commonly preceded by labour-pains, then there is hæmorrhage, and in the latter months of pregnancy the ovum bursts, and the fetus passes, followed by the after-birth, § 49; or the after-birth may be retained even for a long time, and after the mother thinks all is over hæmorrhage again appears, and persists until the contents of the womb have passed away. Their removal often requires skilled assistance, for the retained mass may become decomposed, and the woman's life endangered from the poisoning set up by the putrid membranes, or loss of blood may terminate in fatal exhaustion.

82. *Threatening miscarriage* is heralded by labour-pains, § 106, which usually precede hæmorrhage, and which are distinguishable from 'false pains,' § 107, by certain peculiarities. Labour-pains begin from the cross-bone (*sacrum*), § 26, and pass towards the belly; they come and go at regular intervals, there is a corresponding contraction and relaxation of the walls of the womb, and a gradual opening of the mouth of the womb perceptible to the touch. In threatening miscarriage the open neck of the womb (*cervix*) may permit the membranes to be felt, and yet the loss be avoided by appropriate remedies. The midwife must pursue the same line of treatment as in threatening *abortion*, § 86, even though there be no hæmorrhage: she must see that the bladder and bowel are empty, and send for the accoucheur, who by the use of proper means may perhaps

stay miscarriage, or at least provide against undue loss of blood and its perilous consequences.

83. The *after-treatment* in abortion or in miscarriage must be of the same kind as in labour at full term; for the midwife is to understand that such an accident is by no means one of little importance and to be passed over without attention; neglect may lay the foundation of permanent mischief. Especial care must be taken also at the next pregnancy, for a habit of aborting is very easily induced and very difficult to set aside. It is therefore desirable to obtain the advice of an accoucheur, if not at the time, at least when the woman gets about again.

84. PREMATURE LABOUR coming on after the twenty-eighth week of pregnancy, is to be conducted in the same way as labour 'at term.'

85. When the midwife is called to a case of hæmorrhage she must put the patient to bed, see that the chamber is cool with fresh air, and make an examination, § 73. If, however, the loss of blood has been, or is copious enough to affect the general health, producing exhaustion, &c., § 76, let her send for the accoucheur without delay. If on examination the midwife finds that the bleeding arises from a wound in the privates (*pudenda*), § 35, she should apply a compress or piece of linen folded three or four times to the bleeding spot, and make firm pressure upon it with her finger, and, if possible, compress the place against the bone.

If the source of the bleeding is the 'front passage,' (*vagina*) the midwife must syringe the passage with ice-cold water, and if this is insufficient and the accoucheur is not at hand, the vagina must be plugged, but see § 87.

If the source of the bleeding is the womb, the midwife must determine whether it is the result of disease, or injury to the neck, or whether the woman is pregnant, and abortion or miscarriage is impending, or labour with placenta prævia, § 89.

86. If the woman be pregnant the midwife must determine how far the threatening abortion or miscarriage has proceeded.

In the first stage the neck of the womb (*cervix*) corresponds in form and size to the duration of the pregnancy, and is only sufficiently open to allow the blood to pass away.

In the next stage the neck of the womb (*cervix*) is open enough to admit the finger. Usually the finger meets with a soft clot of blood, and if the bleeding is disposed to cease, this must on no account be disturbed; but if there be no clot and the inner mouth of the womb be dilated, the membranes can be felt.

If the pregnancy is only of ten or twelve weeks' duration the ovum has become detached, and there is little chance of the pregnancy continuing.

If the pregnancy is much farther advanced and the membranes have burst, the midwife can feel some portion of the fetus, the limbs, or the head, or the navel-string, and further pregnancy is impossible.

Lastly, the fetus may have escaped, and only some shreds of membrane or the navel-string may hang out of the cervix.

The midwife must preserve all clots, whether she thinks they contain the ovum or not, in a basin of water for the inspection of the accoucheur.

87. The patient is to be laid upon a mattress and kept cool and very quiet; only cold drinks are to be given, such as lemonade or vinegar and water sweetened with honey, cold beef tea, &c.—nothing hot either for food or drink being allowed. If after a while the bleeding ceases, and no great loss of blood has occurred, the neck of the womb (*cervix*) also not being much dilated, and the parts in a natural condition, the midwife may, if the patient wish it, delay calling in medical aid; but if the conditions tend towards completing the threatening abortion or miscarriage, the midwife should decline farther responsibility.

The midwife must take care only to examine the womb while the hæmorrhage is going on, as touching the neck of the womb (*cervix*) during an interval, may perhaps cause a renewal of the bleeding.

She must recollect that if pregnancy exists, syringing the 'passage' (*vagina*) may bring on labour-pains, especially if the stream of water is directed against the neck of the womb (*cervix*). Plugging the 'passage' (*vagina*) may also induce 'labour,' and therefore neither of these remedies are to be used unless the patient's life is likely to be endangered from loss of blood before the accoucheur can arrive.

88. *To plug the Vagina.*—Take a silk handkerchief, put the two first fingers of the left hand into the centre of it, and let the handkerchief fall over the hand, oil or grease the part covering the two fingers, and pass it up to the top of the vagina. Into the pouch thus formed, pack small pieces of sponge squeezed thoroughly dry, and then some cotton wool, lint or linen, remembering that the upper portion of the vagina is much more distensible than the lower, and will easily take a substance the size of the fist. The blood will swell the sponge and make a tight plug. To remove the plug withdraw the pieces of lint last packed, and then by drawing on the handkerchief the whole of the stuffing can be readily removed piece by piece. If a handkerchief is not at hand, or the vagina is narrow, a piece of sponge squeezed dry, may first be passed up, and then the packing finished with lint or linen. The packing the vagina can also be readily effected by means of the speculum, § 154, and the upper part can be filled with less irritation along the 'passage.' A surgical bandage makes an excellent plug. Whatever is used, some inches of twine or tape should be tied round each piece, so that the ends may hang out of the vagina, for the purpose of withdrawing the plugs when they have served their purpose. The vagina having been filled, a pad and bandage should be applied to the vulva to keep the packing in its place.

The plug may remain twenty-four hours, care being taken to draw off the urine with the catheter, § 153, every six hours. The womb must be watched and examined externally, § 72, to note that it does not become distended by internal hæmorrhage, § 77. This, however, can hardly occur before

the end of the fifth month, but may possibly happen at a later period of pregnancy.

The midwife must understand that 'plugging' the vagina is not at all an easy operation; if it is badly done it may be wholly useless, and if it is done too roughly, serious injury may be inflicted on the mother. Unless, therefore, the midwife is very skilful, and loss of time threatens life, she should leave this operation to the accoucheur.

89. Placenta Prævia.—The after-birth (*placenta*), § 49, is usually attached to the posterior wall of the womb, near the fundus, § 38, but occasionally it is attached so low down towards the neck of the womb, that a portion, or even the centre, extends over the mouth of the womb. When this is the case, it is termed *placenta prævia*. Now the expansion of the lower part of the womb during the last weeks of pregnancy, and more especially when labour comes on, causes such extension of the bunches or cotyledons of the after-birth (*placenta*) that either the blood vessels are torn or the after-birth becomes partly detached, and thereby hæmorrhage is *unavoidably* caused.

90. Bleeding from the womb, or uterine hæmorrhage, connected with the after-birth (*placenta*) is therefore called *accidental* when it occurs from *accidental*, § 79, separation of the after-birth in the early months of pregnancy, and *unavoidable* when it is due to *placenta prævia*. In the former case contraction of the womb stops the bleeding, in the latter case it is the cause of the bleeding. When, therefore, the torn vessels become plugged by clot, as the womb ceases to contract and thereby open out the neck, the bleeding ceases for a while to reappear when labour-pains, § 105, again return.

91. If, then, uterine hæmorrhage occurs during the last weeks of pregnancy, and comes on with a 'labour-pain,' and if the midwife, on making an examination, finds within the mouth of the womb a spongy mass like the head of a small cauliflower instead of the head of the child, she has to deal with a case of *placenta prævia*. This is the most dangerous

of all presentations, § 112, to the mother, for she will most probably bleed to death if the labour is allowed to go on without skilled assistance. But the midwife may find the mouth of the womb closed, and yet the hæmorrhage takes place each time the womb contracts; she must in either case send at once for an accoucheur, as the case will require scientific treatment; and if the hæmorrhage is severe apply the plug, § 92.

92. In most cases of *placenta prævia* the accoucheur has to deliver the woman by 'turning' the child (*version*). This operation is performed by passing the hand into the womb, seizing on one or both of the feet, and making the child turn in the womb from its ordinary posture of head presentation, § 112, to that of foot, § 194. This conversion of a head into a foot presentation is called *podalic version*. It is difficult to carry out, and only to be attempted by the accoucheur.

93. Bleeding from the womb may also occur in the last weeks without the after-birth (*placenta*) being unnaturally placed, or 'placenta prævia,' and the effused blood may clot, and the clot be mistaken by the midwife for the placenta. The mistake is of no consequence to the patient, and quite pardonable in the midwife, whose first duty is to send for the accoucheur, whether her judgment is right or wrong, and to take no responsibility upon herself.

CHAPTER V.

DEATH OF THE FETUS—SWOONING—DISEASES CHRONIC AND ACUTE.

94. CERTAIN causes of death act directly on the fetus, as the following, viz.; original defect in development of the fetus or its envelopes (whence it happens that a dead fetus is often misformed, or is a monster); disease affecting the fetus with or without participation of the mother in the disease; disease of or loss of blood from the placenta; interruption to the circulation of blood between the placenta

and fetus by pressure on the navel-string, either from knots in it, or by its becoming twisted round some part of the fetus; concussion or blows killing the fetus, though not otherwise injuring the mother. The fetus may die without perceptible cause. If the fetus on its death in the first weeks of pregnancy is not expelled, the ovum may develope and become a mole.

95. Moles in the form of bunches of grapes (wrongly named 'hydatids') consist of the dilated and overgrown projections of the chorion, § 49, which form small watery bladders, and may develope to the size of a child's head, or, in fact, until the womb takes on labour and expels the mass; or the mole appears as a fleshy substance from the size of a walnut to that of the fist, being the compressed ovum infiltrated with blood.

The midwife will not be able to recognise 'the mole' before birth, for the womb increases in size just as in ordinary pregnancy, but the hæmorrhage accompanying the discharge of the mole is often very serious, and dangerous to life. The supposed pregnancy in these cases is often continued beyond the usual term. The accoucheur must be called in.

96. When the fetus dies during the first weeks of pregnancy, it may be dissolved in 'the waters' (*liquor amnii*), § 48; when it dies about mid-term it is often hard, as though dried, although immersed in 'the waters'; when it dies at a later period and is retained, it becomes soft, inflated, and the skin peels off, but putrefaction does not occur so long as 'the waters' remain.

97. The signs of death of the fetus are not always very plain. The cessation of the pregnancy is not always apparent; thus the breasts may continue to enlarge; the woman often has the sensation of a chill, and perhaps a disagreeable taste in the mouth. If the pregnancy has gone on for some months, the mother, on the death of the fetus, often feels a cold weight in the belly, as though a foreign body were enclosed; movements of the fetus cease, and this sign is often marked when the fetus has previously made

convulsive motions. The presentation is often changed from that of the head to some other part of the body.

Of course, one sign of life is of more weight than many supposed signs of death.

The midwife must be careful not to alarm her patient if she thinks that the fetus is dead, but should prepare her for the probability of a miscarriage, and be ready to assist the accoucheur, who ought to be summoned.

98. Swooning or Fainting away (*Syncope*), is the loss of consciousness and motion, with relaxation of the muscles. The pulse becomes small and fails, the respiration becomes faint or sighing, the countenance becomes pallid, the lips ashy white. Deep swooning and apparent death approach each other; in the latter condition both pulse and respiration become imperceptible; if pulse and respiration do not return actual death results.

The treatment of swooning and apparent death is to remove the cause, as, by stopping hæmorrhage, by the admission of fresh cold air, by loosening the clothing. When the patient can swallow, *but not before*, give a little cold water, or some brandy and water; sprinkle the face and neck with cold water; apply smelling-salts to the nose, taking care, if the salts are strong, not to cause inflammation in the nostrils by too prolonged application. If the limbs are cold, they should be chafed with warm cloths; mustard poultices may be applied to the chest, calves, and arms, taking care not to leave them on too long, as their use is over when redness appears, and further application depresses the patient, and may cause severe wounds. If there is tendency to hæmorrhage, warm water to the feet is inadmissible; the head must be placed low by taking away the pillows, &c, especially if the fainting proceeds from loss of blood. Medical aid must be sought without delay.

99. If death threatens when the womb is as high as the navel, there may be a chance of saving the fetus by the bringing on of premature labour; and, even if death overtakes the

mother, the child may sometimes be saved if the accoucheur is present to perform 'version,' or to apply instruments if the position of the child admit of their use, or by an operation. A woman who dies after she has reached the seventh month of pregnancy should not be left undelivered, unless the accoucheur knows that the child is also dead.

100. Old standing disease affecting the lungs, as, for example, asthma, consumption, or bronchitis, which, during the pregnancy, has not been productive of more than ordinary inconvenience, may, when '*labour*' is coming on, greatly increase the risk to life. If, therefore, the midwife finds the breathing much disordered, or that the patient has attacks of spitting of blood or of large quantities of phlegm, she must call in the accoucheur, as a speedy termination of the labour by artificial means may be necessary to save life.

101. If the patient knows that she has disease of the heart, or if she suffers from irregular beating of that organ, as palpitation, especially if this is accompanied with difficulty of breathing, or with faintness, the midwife should decline the sole responsibility and demand the presence of the accoucheur; for sudden death during the labour has not unfrequently occurred where disease of the heart or of the large vessels has been present.

102. Vomiting of blood from the stomach sometimes occurs during the last week of pregnancy, or at the commencement of labour; in such a case medical aid must be obtained without delay, and meanwhile the midwife may give the patient small lumps of ice to swallow.

103. The sudden coming on of any acute disease about the time labour is expected, whether general as fever, or attacking some one or more parts of the body, as inflammation of the heart or of the lungs, or of the bowels, or of the other viscera, § 20, or of the limbs, as rheumatism, or any fracture or severe strain affecting any limb, renders medical aid absolutely necessary, and the midwife must insist on having proper assistance.

PART III.

CHAPTER I.

LABOUR—THE PAINS—PRESENTATION OF CHILD.

104. 'LABOUR' is the expulsion of the fruit of the womb by the natural forces and through the natural passages, and is the termination of pregnancy.

'Labour' may come on at any period of the pregnancy. 'Labour' at full time or 'at term' may be divided into two great classes, 'ordinary' and 'extraordinary.' The midwife has chiefly to do with 'ordinary' labour.

105. The force by which ordinary labour is accomplished is the muscular contraction of the womb. This act is involuntary, or independent of the will of the woman: though it often ceases from mental emotion, as when the patient is disturbed by the entry of a stranger into the chamber when labour is going on.

This contraction of the womb is usually accompanied by pain, and therefore the word *Pains* or *Pang* is often used as synonymous with uterine contraction, but the contraction may be painless. The force of the womb is aided during the latter part of the labour by the muscles of the belly, which the woman brings into action when she strains or 'bears down,' just as in emptying the bowels at stool. This action is voluntary. From the first month of pregnancy up to the beginning of the ninth month the womb has gradually attained the shape of an egg with the pointed end down-

wards; at this period the lower portion begins to open out, and this expansion, caused by contraction of the uterine fibres, is often accompanied by pains occurring at an interval of a day or more. These *preliminary pains* are more frequently and more severely felt in first than in later pregnancies, in which they are often unnoticed.

The expansion of the lower portion of the womb causes a flattening of the neck, which consequently feels to the touch as though it was shortened, and finally like a mere ring; it is then said to be *effaced*. When the womb is fully expanded and the neck and mouth quite open, a continuous cylinder is formed from the fundus of the womb to the opening of 'the privates' (*vulva*).

106. 'The PAINS,' or contractions of the womb, when labour has fairly commenced, come on at regular periods; the interval between each 'pain' is called 'the pause.'

'The pain' or 'pang' is felt to commence at the cross-bone (*sacrum*), § 26, gradually to increase, involving the whole womb, and, having reached its height, gradually to decrease and pass away. The progression of 'the pain' is palpable to the midwife's hand, if laid on the belly. The womb becomes rounder, harder, and seems to raise itself up, and again subside.

When the woman's time of delivery is come the 'pains' become regular and frequent. The frequency and duration of each 'pain' increases as the labour goes on. There is often, however, an apparent cessation for some time, as an hour or more, though the opening out of the neck of the womb is going on as it were in silence. The average duration of a 'pain' is about twenty to forty seconds, of the pause about five minutes or longer; but some women have only a few 'pains,' others suffer a great number; the actual duration, however, of each pain, is usually less than a minute.

The pains, though involuntary, may be suspended by mental emotion, or by opiates for a considerable time.

107. *False pains* are not due to contractions of the womb,

but to irritation of the bowels, often by 'wind,' or to spasmodic action of the belly, diaphragm, or other muscles. As there is no action of the womb, *false pains* do not advance the labour; on the contrary, they rather retard the labour, and may, if violent, harm the patient, requiring medical treatment to relieve the distress they cause when excessive. They are distinguished from 'true pains' by their situation, their irregularity, and their course. On examination the womb is not found in movement during 'the pain,' but remains quite inactive.

108. The *pains* may be deficient or excessive (see §§ 158, 160).

109. At the commencement of labour, the bladder and the bowels are often irritable, and if the distress is excessive, it can be relieved by a *small* injection or enema, § 152, of two table-spoonfuls of warm thin starch, into the bowel; there may be nausea and even vomiting; a sensation of cold and a trembling of the limbs are often experienced. A glairy reddish discharge proceeds from the womb, called '*the show*.' It is the mucous or slimy plug from the neck of the womb (fig. 14) mixed with blood, and the secretion from the glands of the cervix (fig. 18), and affords a strong proof that labour has begun. It often, however, escapes notice.

110. Labour is usually divided into three stages. During the first stage, the mouth of the womb (*os uteri*), § 39, becomes fully dilated, and its termination is by rupture or bursting of the membranes and discharge of 'the waters,' § 48. Expulsion of the child terminates the second stage. Extrusion of the after-birth, § 49, concludes the third stage.

111. Expansion of the mouth of the womb progresses differently in different women. Favourable progress is marked by softness, laxness, and dilatability, but, in some women, the mouth of the womb feels like cartilage, thick and hard, in others like a thin rigid wire; this last condition is the most unfavourable; if the membranes are thin they are apt to burst, letting the waters escape too soon, before

they have accomplished their wedge-like office of dilating the soft parts. It frequently happens, however, that though on a first examination the mouth of the womb has been felt hard and unyielding, yet on a second examination some time later, expansion or opening out of the mouth and neck has duly taken place.

112. The *presentation* and *position* of the child should be

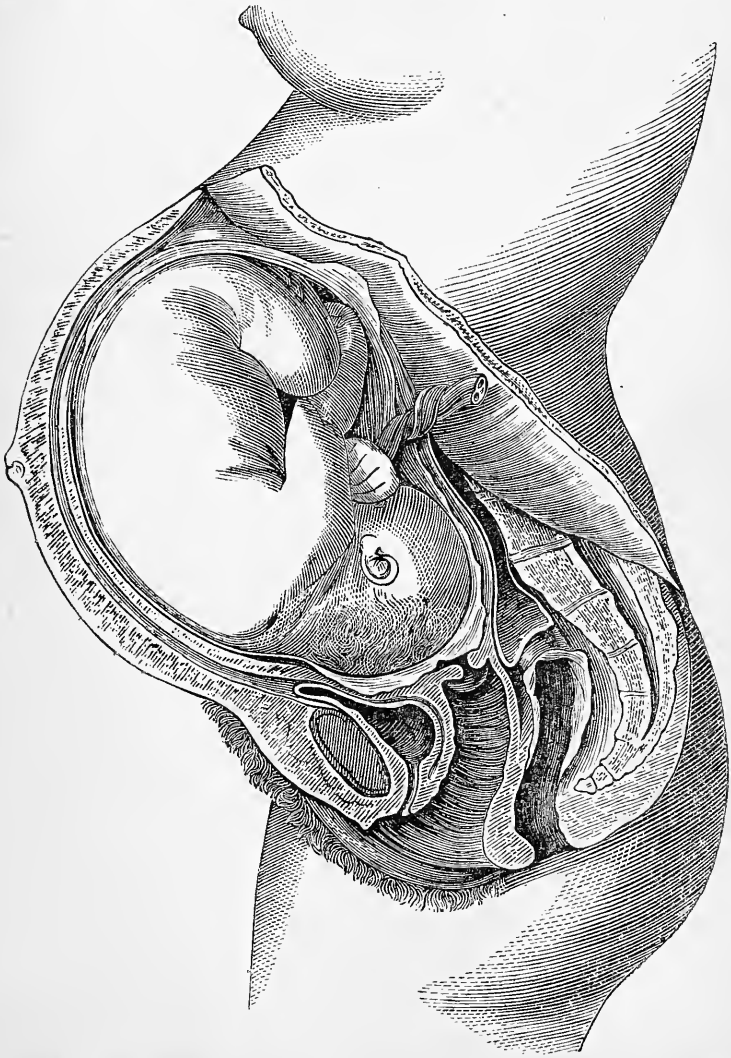


FIG. 24.—The uterus at the end of pregnancy. Vertex presentation. (After Maygrier.)

made out during the first stage of labour. The part of the child that offers at the brim of the 'basin' (*pelvis*), § 23, is termed the 'presenting' part, or 'the presentation,' and the relation this part bears to the diameters of the brim of the basin is termed 'the position.'

113. 'The *usual posture* of the child in the womb is with the head towards the mouth of the womb; the top of the head or "*vertex*" being the most dependent part, the chin is pressed upon the chest; the neck and back are bent into a curve; the buttocks lie at the bottom of the womb (*fundus*); the thighs are bent up towards the belly, and the legs back upon the thighs; the arms are crossed upon the chest.' — *Ramsbotham.* (Fig. 24.)

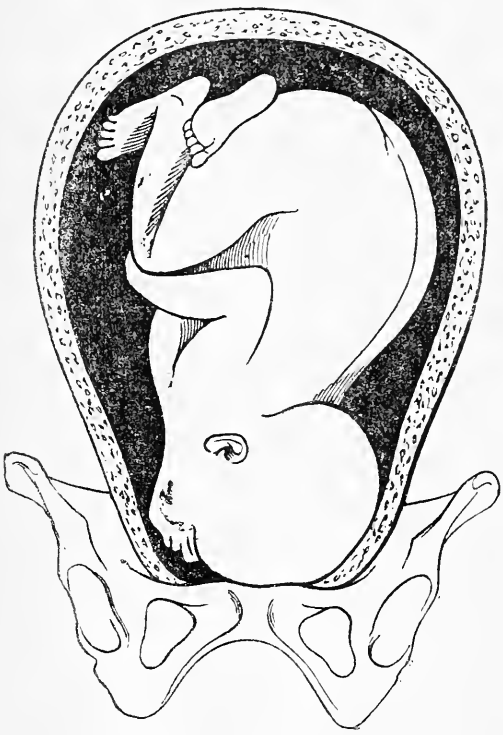


Fig. 25.—Face presentation.

114. The child may assume other, and unusual, or 'extraordinary,' postures in the womb, and so 'present' by some other part than the vertex. Ch. VI.

1. The head being towards the mouth of the womb, the forehead or face, instead of the vertex, may be the most dependent part, the neck being bent backwards (Fig. 25).

2. The breech may be downwards, or the knees or feet may present (Fig. 26).

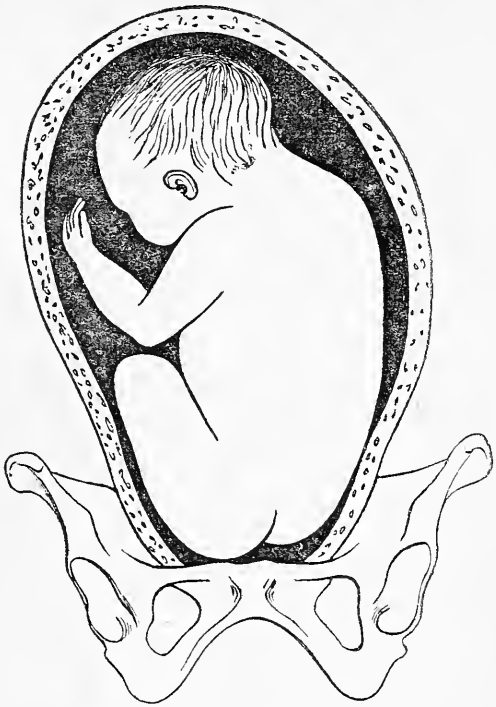


FIG. 26.—Breech presentation.

3. The child may lie crossways to the long diameter of the womb. (Fig. 27.)

In all these postures the back of the child is usually turned towards the front of the mother, but the reverse may occur.

115. The posture of the child may sometimes be made out by external examination, § 72, especially in thin persons. When '*the breech*' is downwards, or 'presents,' the shape of the womb is altered, the fundus being smaller, and the pubic

portion more distended than in head presentations. When the child lies '*cross*' the uterus does not generally rise as

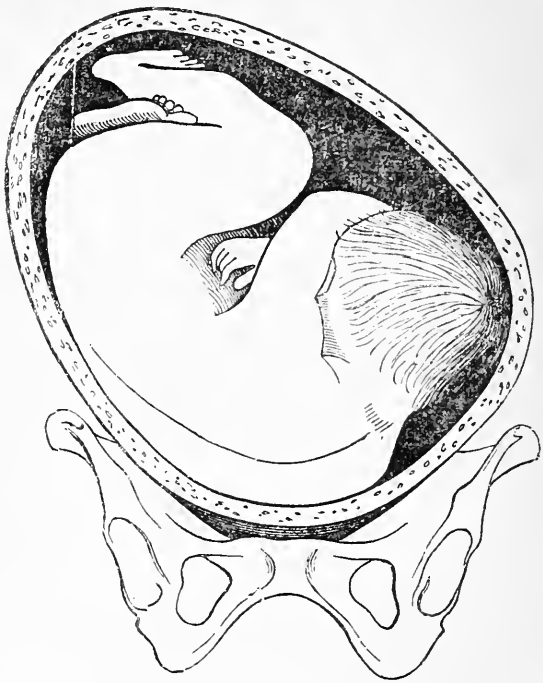


FIG. 27.—Cross presentation.

high as ordinarily in the abdomen, and appears of greater width.

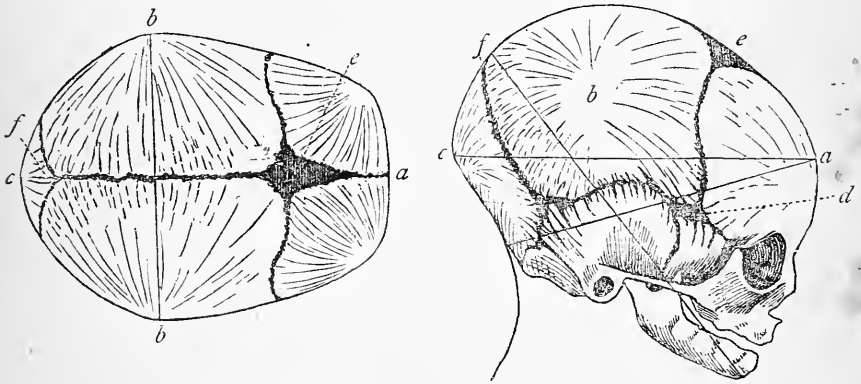
If an irregular posture is suspected the accoucheur must be consulted.

CHAPTER II.

HEAD OF CHILD—MANAGEMENT OF ORDINARY LABOUR.

116. As 'the pain and peril of childbirth' arise chiefly from the difficulty attending the passage of the head of the child through the 'basin,' or pelvis, of the mother, it is essential that the midwife should be well acquainted with their relative shape and size. The 'basin' (*pelvis*) has already been described, § 32, and the particulars relating to the head of the child should now be studied.

117. The bones that form the head (*cranium*), (the face being omitted), are one frontal, *a*, or forehead-bone;[1] two



FIGS. 28 & 29.—*a* Frontal bone. *c* Occipital bone. *e* Great Fontanelle.
b Parietal ,, *d* Temporal ,, *f* Small ,,

'*parietal*,' *b*, or side-bones, one on each side, to form the vault of the skull; one occipital, *c*, at the back of the head; two 'temporal,' *d*, or ear-bones, which complete the circumference.

[1] At the time of birth this bone is in two halves, which afterwards become soldered together.

The junctures of these bones are called 'sutures.'

The juncture between the two parietal bones, running from the frontal to the occipital, is called the 'sagittal,' or arrow suture; that between the frontal and parietal bones is called the 'coronal,' or crown suture; that between the occipital and parietal bones is called the 'lambdoidal' suture, being shaped like a Greek L, Λ (lambda).

118. The frontal and parietal bones are separated at birth by a large interval filled in with a tough skin. This is called the *anterior* or *great fontanelle*. Its shape is that of a lozenge, or diamond. A similar but much smaller interval exists between the occipital and parietal bones. This is called the *posterior* or *small fontanelle*, and is of a triangular shape. These 'fontanelles' are of great importance at the time of labour, as by touching one or other of them the position of the head, in relation to the basin or pelvis, is made out.

It will be observed that these bones of the skull are loosely jointed together, and thus the head can be moulded to the passages of the mother at the time of birth; whereas if the bones were firmly locked together, as they afterwards become, the head could not be thrust through 'the brim' 'and vagina' without immense, perhaps insurmountable resistance, §§ 135, 205.

119. The only diameters or measurements of the head necessary to be noticed here are :—

The *long* diameter, *a*, *c*, from the centre of the forehead to that of the occipital bone, which generally measures $4\frac{1}{2}$ inches, and the *short* diameter, *b*, *b*, from one parietal bone to the other, which measures $3\frac{1}{2}$ inches.

120. It has been seen, § 32, that the greatest diameter of the brim of the 'basin' or pelvis, is *the oblique*, or that from the right or left sacro-iliac joint to the left or right branch (*ramus*) of the share-bone or pubes, which is $4\frac{3}{4}$ inches. The head of the child can evidently pass most easily when the '*long*' or occipito frontal diameter ($4\frac{1}{2}$ inches) corre-

sponds to this oblique diameter of the 'basin' (*pelvis*) ($4\frac{3}{4}$ inches); moreover, as the back or sacral portion of the pelvis is more capacious than the front or pubic portion, the head will pass through the hollow of the basin (*pelvic excavation*) most easily, if the face is directed backward.

121. When the child 'presents' the head in such 'position' that the occiput, or back of the head, is at the left half of the share-bone (*pubes*) of the mother, and the forehead at her right sacro-iliac joint, or joint of the cross-bone and haunch-bone, it is called a head presentation in the first position, and, as a fact, this is by far the most common presentation and position.

The 'second' position is the converse of the 'first.' The back of the head (*occiput*) is at the right half of the share-bone or pubes of the mother, and the forehead at her left sacro-iliac joint.

The course of the labour and its management is the same in both positions, § 143; and therefore the 'second' position is classed with the 'first' position, although in practice it is not quite so commonly met with as the 'fourth' position, § 183. The 'first' and the 'second' positions will be considered as 'ordinary' labour; all other presentations and positions will be treated under the class 'extra-ordinary' labour.

122. It is most important that the presentation should be determined before the waters break away, for any irregularity can be rectified without much difficulty so long as the membranes are entire and the fetus floating, but when the waters have run away the womb may clasp the body of the child so tightly that it becomes a matter of great difficulty to alter a wrong 'presentation,' or 'position.'

The midwife must also remember that so long as the waters remain the child is safe, but when they have drained away the child is in peril of its life until delivery is accomplished.

123. If then, on the first examination, the midwife finds the vertex, or top of the head, 'presenting,' she may assume that it is in the first or second position, and feel confident that all will go right, supposing the 'basin' (*pelvis*) is of ordinary size. If some other part present, or the head be in another position, she must make a second and more careful examination.

The finger may be passed into the 'passage' (*vagina*), § 37, during a pain, but no pressure should be made on the 'bag of waters,' § 48, lest they should burst. As the pain goes off the protruding 'bag' recedes, and the finger can then touch the presenting part of the child.

124. The *head* is known by its size, roundness, and firmness, and by the sutures, § 117; the *breech* feels more cushiony and pointed, and has no sutures. The head can often be felt externally, by pressing downwards with the hand just above the pubes; and in thin persons the body and buttocks of the child with the feet, can be felt through the belly at the bottom of the womb.

125. For Breech and other Presentations, see Part III., Chap. VI. p. 99, &c.

126. If the mouth of the womb (*os uteri*) is only just beginning to open, the woman may walk about, sit, stand, or lie as she pleases; generally, when a pain comes on, she will lean forward, grasping the back of a chair to support herself. The 'pains' during the first stage are called 'cutting' or 'grinding' pains, and no exertion should be made by the woman during this period, for the womb alone can act to expand the lower portion and open the 'mouth.' Straining to contract the belly will rather retard than assist.

When the mouth of the womb (*os uteri*) is dilated to the size of a crown-piece, preparations should forthwith be made for putting the woman to bed.

127. The bed should be a mattress, and should be guarded by laying a piece of indian-rubber sheeting, or American leather cloth, or something of the kind, upon the under

sheet; upon this 'guard' the draw-sheet should be laid, made by folding a small sheet three or four times square, to be placed under the hips of the woman, for the purpose of absorbing the fluids, &c., that pass from her during labour.

Plenty of napkins should be well aired, and ready to hand. The woman should be laid with her back and feet to the light upon her left side, obliquely across the bed. She should be undressed, and her clean nightgown rolled up high above the waist, so as to escape being soiled. A loose sheet or garment can be spread over her, to be taken away with the draw-sheet when all is over. The practice of being 'confined' without undressing and in old clothes is on no account to be allowed, as mischief often occurs when the woman is being moved to get off her dress and petticoats, or else she lies in wet and soiled garments. Moreover, if operative interference is requisite, the removal of the clothes gives additional trouble, and valuable time may be lost.

128. A good supply of beef tea should be got ready. Small quantities of it may always be given from time to time, but no solid food. Thirst is best assuaged by tea-spoonfuls of cold water, not by drinking it in draughts, or by barley-water, thin gruel, cold tea, toast-water, and the like. Wine and spirits do harm, unless there is exhaustion, when the case will require skilled medical aid. If the feet are cold a warm-water bottle gives great comfort. The midwife should always be careful to wrap up a hot-water bottle in a thick blanket, or flannel, or the like; the feet or legs are very easily burnt if exposed rashly to a hot-water vessel.

Enquiry must be made as to the state of the bowels, and, if they have not acted within six hours, an enema, or clyster, § 152, should be administered of warm soap and water. Emptying the bowels facilitates the action of the womb, and prevents much discomfort, for the contents of the bowel will certainly be forced out during the second stage of labour,

as the head passes along the 'passage' (*vagina*), § 137. If there is any difficulty in passing water, the urine should be drawn off with the catheter, § 153, every six hours, but it is very seldom that this operation is required in ordinary labour.

129. The *threads* or *ligatures* for the navel-string should be prepared by doubling together three thicknesses of whitey-brown thread about six inches long, and knotting together the ends. Four should be put in readiness and laid at hand with the scissors, which must be blunt pointed.

130. The duration of the first stage is very variable; it is usually longest in first pregnancies. Out of 984 cases observed by Dr. Churchill, in 167 the duration was 2 hours; in 335 from 2 to 6 hours; in 165 from 6 to 10 hours; in 113 from 10 to 14 hours; the longest time was one case of 105 hours. It is seldom known when the labour really commences, that is, when the first contraction of the womb occurs. It will *generally* be found safe to leave the patient until the mouth of the womb (*os uteri*) is as large as a crown-piece if it is her first child, but not so long in later pregnancies; so long as the membranes are intact no harm can come to either child or mother. As a rule the soft cushiony mouth dilates more readily than the hard thin rigid one.

131. Vaginal examination, § 73, often called 'trying a pain,' should be made from time to time until the exact position of the head is determined, and the sooner this is known the better, so that if the accoucheur is required to rectify an irregular position, advantage may be taken of doing so while the membranes are unbroken.

As soon as it is found that the presentation and position, § 121, are favourable, the 'passage' (*vagina*) should be meddled with as little as possible. Frequent examinations tend to irritate the parts and so may do mischief.

132. The midwife must never try to dilate the 'os' or mouth of the womb, or rub it with her fingers; more harm than good will result from so doing, whilst, during the first

stage mere delay even for days, before the waters break, is of no consequence. See § 158.

133. It sometimes happens that the child's head covered by the anterior wall of the womb now much thinned presses down into the 'basin' (*pelvis*), and is thought to have passed through the mouth of the womb, and to be in the second stage of labour. The mistake will not be made if notice is taken that the examining finger will not pass up between the womb and the vagina, whereas when the mouth of the womb is fully dilated, the finger will pass between the head and the brim of the 'basin.' This condition may be found when the womb is tilted forwards, as in pendulous belly, § 67, and should be rectified by putting on a 'binder,' § 149, and making the woman lie upon her back instead of her side until the head is free of the mouth of the womb.

134. As 'the pains' increase in frequency and force, the neck of the womb (*cervix*) opens out more and more until it is wholly dilated, and one continuous canal is formed from the *fundus uteri* to the *vulva*.

The 'bag of waters' has now accomplished its purpose, that of forming a wedge to dilate the cervix in front of the child's head, and usually ruptures, discharging some or all of its waters which may be received into a folded napkin or sponge. Sometimes the membranes break with a circular cut, so as to leave a cap or 'caul' on the child's head with which it is born.

If the membranes are very tough and the waters excessive the womb does not always contract with sufficient force to break them, and the midwife may in such cases assist by sawing on them with her finger nail or a quill pen when they are tense during a pain. Of course this must not be done unless the neck is fully dilated, the presentation and position being also favourable.

135. After the passing of 'the waters' the womb sometimes has a period of rest, and the woman may get a short sleep to be wakened up by the progress of the *second stage*

of labour, that of expulsion of the child; or the labour may progress continuously.

When the head presents in 'the first' position it is in such relation with the brim of the 'basin' that the back of the head (*occiput*), § 117, is at the left hip (ilium, or acetabular surface), and the forehead is at the right sacro-iliac joint, Fig. 3. The 'basin' being much more shallow in front at the share-bone or pubic border than at the sides, Fig. 7, the examining finger impinges first on the part of the head nearest to it, and that part is the top of the right parietal bone, Fig. 29; the finger passing obliquely backwards next finds the sagittal suture, § 117, and tracing to the left and a little forwards comes to the posterior or small fontanelle, § 118, where the occiput meets the two parietal bones.

It is very important to recognise this place, and to remember its triangular shape, and how it differs from the lozenge or quadrangular shape of the anterior fontanelle.

If the examination is made when 'a pain' is 'on,' the edges of the bones will be felt to overlap and the scalp to be loose and wrinkled; keeping the finger on the spot, the bones separate as the pain goes off, the opening or 'fontanelle' becomes distinguishable, and the bones often feel moveable or loose under the tightened scalp.

136. As each 'pain' comes and goes the head seems to advance and recede; sometimes the retreat seems to be as considerable as the advance, but the next 'pain' drives the head still lower, so that real advance is secured.

As the head advances it is bent upon the breast so that the top of the head (*vertex*) and the back (*occiput*) first pass the brim, and thus entering the 'hollow' or 'cavity' it reaches the floor of the 'basin' (*pelvis*). Here the head makes a *turn*, the forehead is thrown into the hollow of the cross-bone (*sacrum*), § 26, and the back of the head (*occiput*) under the arch of the share-bone or pubic arch, § 29, so that its occipito-frontal or long diameter now corresponds to the pubo-coccygeal or long diameter of the outlet of the 'basin'

(*pelvis*), § 32, which is the greatest diameter, the transverse diameter or that between the seat-bones being the least.

At this period *cramp* is apt to come on in the calf of the leg and thigh, due to pressure by the child's head on the great nerve (sciatic) that passes out of the 'basin' (*pelvis*) by the great sciatic notch, § 25, and runs down the back of the leg. Fig. 30 shows the different positions of the head during its passage from the brim till it is born.

137. The head next presses upon the 'perineum,' § 36, and distends it more and more until it becomes much thinned and like 'wet leather.'

It is the practice of many accoucheurs to *support* the perineum during this stage, but many others think that the less it is meddled with the better. The best method of treating the perineum is to apply the back of the left hand covered with a napkin, the wrist being at the anus and the fingers at the privates or vulva, thus, as it were, elongating the perineum. Only equal counter-pressure is to be used, the child's head being let press against the hand.

Attempts to stretch the perineum or to slip it back over the child's face are absolutely wrong, the parts are likely to swell and become inflamed, and the result may be rupture or laceration. So also to put the finger into the bowel or between the perineum and the head, with the idea of assisting the progress, is 'bad practice.'

If the parts are dry, lubrication with fresh lard or oil is of service. A warm poultice to the perineum when it is rigid often assists its expansion.

138. During this 'second' stage the woman helps the action of the womb by bowing herself forward so as to contract the belly. It is a common practice to fasten a roller towel to the post at the foot of the bed for the woman to pull at: a foot-board to press against with the feet is also of service to some. Pressure with the hands at the loins often seems to assist, and the sufferer begs for 'some one to hold her back.'

139. When the womb does not act vigorously much assist-

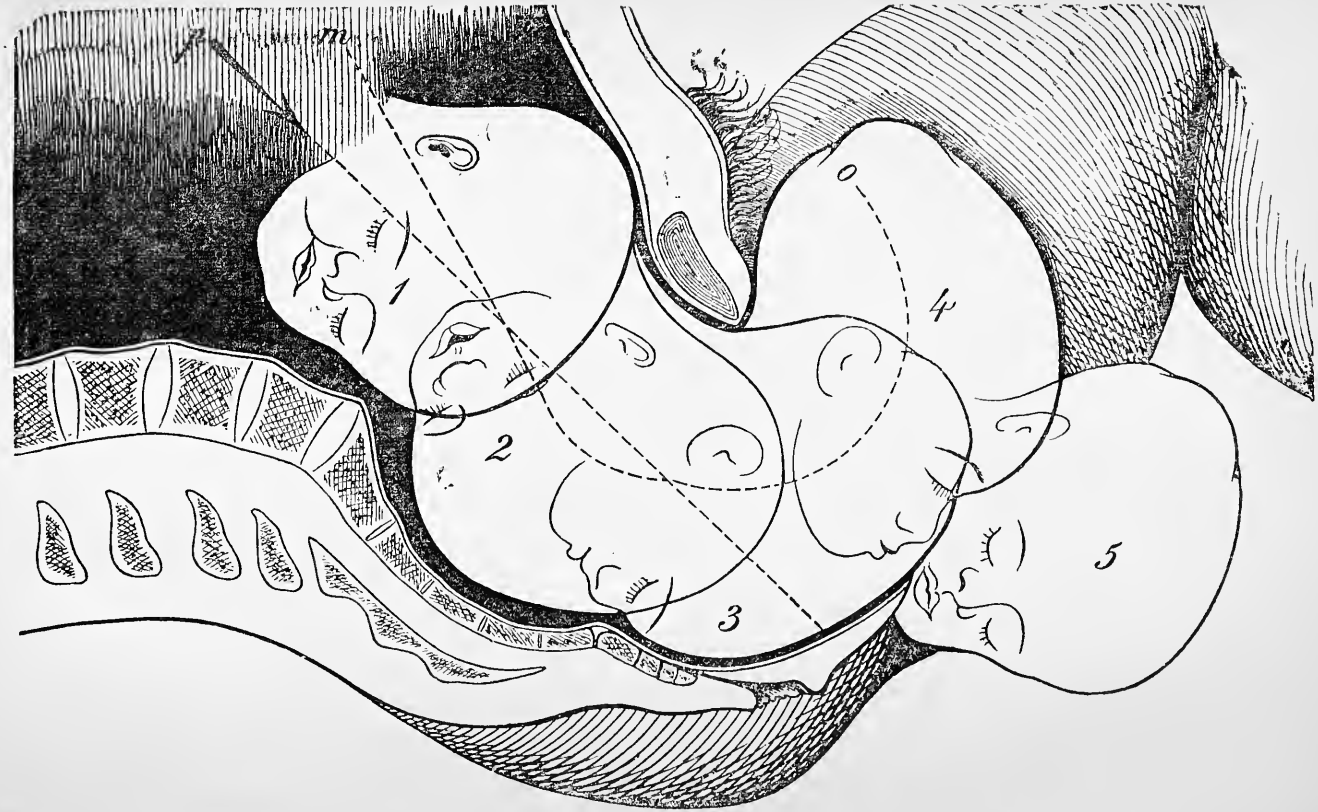


FIG. 30.—Vertex 'presentation,' first 'position.'—1, The head is in the first position at the brim; 2, the head is being bent upon the breast as it passes through the brim; 3, the head having passed the brim has turned so that the face is in the hollow of the sacrum; 4, the head passing the vulva, the chin is gradually freed; 5, the head turns with the face towards the thigh as the shoulders pass. The arrow *p* shows the axis of the pelvis; the line *m*, *o*, is the line of descent, § 34.

ance can be given by the midwife if she places the woman on her back, and, grasping the womb between her two hands, presses downwards firmly but gently during a 'pain.' It must not be done roughly, but simply as an aid to the expulsive action of the womb. When the abdomen is very lax the binder should be put on at the commencement of labour and tightened as it goes on.

140. Gradually, the 'privates' (*vulva*), § 35, open, and the occiput or back of the head shows itself beneath the arch of the share-bone (*pubes*), then the back of the neck (*nucha*) remains fixed there while the forehead, face, and chin, sweeping successively over the perineum, appear at the opening; as the chin passes the perineum slips back and embraces the neck, the head now falls loosely backwards towards the anus. At this period it is sometimes found that the navel-string is coiled round the neck, and it should, if possible, be slipped over the head of the child and so released, § 171. After a short interval the shoulders protrude, and these make a turn so that the right shoulder commonly appears beneath the share-bone or pubes; this movement of rotation causes the face to turn upwards towards the right thigh of the mother. The shoulders pass, and the body follows in a spiral direction.

141. The pains felt during this stage are called 'forcing pains.' The midwife must be careful not to allow the woman to stretch her legs out, but the crouching posture must be kept, and though bearing down assists the action of the womb, the midwife must not allow the woman to make sudden or too violent efforts. When the shoulders appear, the birth must not be hurried by dragging at them, for if the womb is emptied too fast, it may not contract properly, and hæmorrhage will then result.

If the action of the womb ceases for a while before the shoulders appear, and the body is ejected, the midwife must wipe the mouth of the infant, and feel the navel-string; so long as it pulsates freely there is no danger to the child,

although the face may be getting dark with congestion; but if the beating in the navel-string becomes slower, and the child attempts to breathe, it is a sign that the cord is pressed upon, or the after-birth is detached, and the birth must be ended without delay. The action of the womb must then be encouraged by friction on the belly.

As the child passes out the midwife should follow down the womb with her left hand on the mother's belly, while she receives the child with her right, and directs it forward into the bed, and should then ask the nurse or some one to place her hand over the womb and maintain firm pressure while she separates the child from the after-birth.

142. The child having cried or breathed strongly, the midwife taking up the navel-string between her finger and thumb, examines it to see that no loop of gut protrudes beside it, and then passing one of the threads or ligatures, § 129, round it about two inches from the navel, taking care not to include the skin if any is prolonged upon it from the belly, ties it with a double knot sufficiently tightly to stop the circulation of blood, but not to cut through the navel-string. She places a second thread or ligature[1] at about an inch and a half distance from the first, and divides the navel-string between the two threads or ligatures. Cases of carelessness in cutting the navel-string have been reported when some portion of the child, as a toe or finger, has been wounded by the scissors. The midwife then removes the child, placing it in a blanket at the foot of the bed or in a convenient place, and notices the sex and any peculiarity about the body.

143. The progress and management of labour when the head presents in the 'second' position, § 121, is the same as

[1] The second ligature on the placental side of the funis is not absolutely necessary, unless there are twins with only one placenta. As, however, there may be uncertainty as to the existence of twins and the manner of their placental connection, it is better to follow the common practice, and use two ligatures.

just described, with these points of difference : the finger, on examination, impinges on the posterior superior portion of the left parietal bone, the posterior or small fontanelle will be found at the right ilium of the mother, the head in the second stage makes the 'turn' from left to right.

144. The midwife now attends to the 'after-birth,' the removal of which constitutes the third stage of labour.

The after-birth (*placenta, secundines*), § 49, is forced out by the contractions of the womb. Its attachment being over a large portion of the surface of the womb, as the womb empties itself and contracts or shrinks to smaller dimensions, the after-birth becomes loosened and drops from its place, the contractions of the womb then expel it just as they previously did the child.

The midwife therefore must not try to pluck the after-birth away, but must allow the womb to expel it ; the expulsion is generally accomplished in about a quarter of an hour after the child has passed, though sometimes the after-birth is thrown out together with the feet of the child. Commonly, the womb after a repose begins again to contract, and after one or more 'pains,' the after-birth passes into the vagina ; sometimes it is thrown quite into the world, but usually the midwife has to remove it from the 'passage' or vagina. This should be effected by taking the navel-string in the left hand, and passing two fingers of the right hand along the cord till they reach the after-birth ; if this is easily reached it is certain the after-birth is detached, and by groping with the two fingers and just keeping the navel-string tight, it will soon yield. If the after-birth is high up, the navel-string should be first drawn a little backwards, and as the after-birth yields, slight traction should be made forwards, that is, the hand holding the 'cord' should be brought towards the share-bone or pubes, and the after-birth will follow along the 'passage' or vagina.

As it is drawn out of the 'passage' (*vagina*), it should be turned round so as to make a wisp of the membranes and

get them clean away. The vessel to receive it may be placed close to the patient, so that the after-birth, together with any clots, falls into it. The mother can give no aid, and any straining on her part, forced coughing, bearing down, &c., tend to do mischief.

The after-birth should be carefully examined to see that it and the membranes have all been removed. It has happened that the navel-string has been brought away with a clot of blood adherent, and the after-birth left behind, and fatal hæmorrhage has followed.

The after-birth having been removed, a warm dry napkin must be applied to the vulva, and the mother left to rest for an hour before she is moved.

145. The child can now be attended to and examined, to see that it is perfect in all its members.

A child is known to be *mature* or arrived at its full growth within the womb (*intra-uterine*) by the following signs :—

The colour of the skin in the mature child is a clear red, in the immature a purplish red.

The body of the mature child is bare, the *hair* on the head plentiful and coloured, the eyebrows and eyelashes are present. The body of the immature child is covered with down, the hair of the head and eyebrows scanty. The *nails* of the mature child are firm and project beyond the finger; of the immature soft, transparent, and short. The *body* and *limbs* of the mature child are full and rounded, and it kicks vigorously; the *limbs* of the immature are meagre and drawn up towards the belly.

The *voice* of the mature child is strong and loud; that of the immature, whimpering and weak.

The *chest* of the mature child expands fully, that of the immature is *chicken-breasted.*

The *face* of the mature child is proportionate with the head and plump; the face of the immature is smaller, and the head larger, and the appearance is that of an 'old man's' face.

The bones of the head of the mature child are firm; the *small fontanelle*, § 118, is closed, and only the edges of the bones are to be felt; the bones of the head of the immature child are wider apart, and the *small fontanelle* presents an opening like the large fontanelle of the mature child.

146. The new-born child is covered more or less with a soft cheesy substance. This is readily removed by applying a little oil or lard, or, what is nicer, a beaten-up egg, and then washing the infant tenderly with a flannel and soap and water, taking care not to fray the delicate skin. It is of no consequence if the cheesy matter is not entirely removed at the first washing, as it will dry and rub off in a day or two.

147. When the infant has been cleansed, the navel-string must be arranged. Cut a hole in the centre of a piece of rag four inches square, draw the navel-string through it, fold the loose portion of rag over the cord, and turn it upwards, and to the left on the belly. To keep it in place, a broad piece of flannel is passed round the child's body and secured by a few stitches. The portion of cord generally drops off in about a week.

The child can now be dressed in the usual way, but especial care must be taken not to let the binder that goes round the chest be at all tight; if it is so it will prevent the proper expansion of the chest in breathing, and be injurious to the child.

The child is now to be placed upon a pillow covered with a blanket, or in its cot, and allowed to sleep. Nothing of any kind in the way of food or physic, no butter and sugar, no gruel, or such like mess, is to be given to the child.

148. At the end of an hour the napkin placed at the 'privates' or vulva of the woman should be changed, and notice taken if there is any flow of blood. It is not unusual for a few clots to pass, and sufficient bloody fluid to soak a napkin. The womb must be felt for from the belly, and if properly contracted will be found between the navel and pubes, usually on the right side, as a round hard mass

about the size of a child's head at birth. If all is right the draw-sheet and the loose covering laid over the mother may be removed, the night-dress drawn down, and a fresh napkin should be applied to the 'privates,' or vulva, and one or two laid under the hips. The woman may now be placed comfortably on her back, and the bed clothes arranged for sleeping.

149. The BINDER is a broad bandage about 14 inches wide and 2 yards long. To apply the binder, roll it up, and while the patient is on her back pass it under the small of her back, and get some person standing on the opposite side of the bed to draw the roll towards her, keeping hold yourself of the loose end. The patient is not to be disturbed or to give any assistance. Draw the binder moderately tight, but not too tight, and fasten it with nursery-pins. It must act as a broad belt, and not like a cord. A binder made of holland, with three sets of strings to tie across the belly, is preferable to the common bandage, as it can be adjusted with greater ease. A doubled napkin can be placed beneath the binder at any part requiring gentle pressure; great relief is often thus afforded when flatulence or after-pains are troublesome.

The binder is chiefly of use to those whose abdomen is very lax, as it supports the loose walls of the belly, but it is not a preventive against 'flooding,' § 175, which depends on an uncontracted state of the womb; many do not use it at all, and if it be drawn too tightly it may be harmful.

150. If the mother wishes for it, a little tea or gruel may be given and she should be encouraged to sleep. It is a great mistake to keep the patient awake with the idea of preventing hæmorrhage, as the midwife can, and should, from time to time look at the napkin placed on the 'privates' (*vulva*), without disturbing the patient. If hæmorrhage comes on the patient is always restless, and does not repose quietly as when all is well.

CHAPTER III.

THE MIDWIFE'S 'BAG'—THE ENEMA—THE CATHETER—WHAT TO OBSERVE.

151. When the midwife is called to a case of supposed labour she should go prepared to meet any emergencies that may arise, and to remain with the patient if required. She should take with her, in a small bag, the following articles: a syringe or enema apparatus, a catheter, a speculum, scissors, thread, smelling-salts, pins, Condy's Fluid.

152. (1.) *The syringe* or *enema apparatus.*—The indian-rubber ball with two tubes answers fairly. A vaginal tube is sold with it which fits on to the small nozzle for the bowel. The tubes as usually sold are too short, and should be replaced by longer ones. The wire sometimes found in them should be removed, as it soon rusts and stops up the passage. The indian-rubber syringe cannot be used with an oil or turpentine enema, as both these fluids will destroy the indian-rubber: when, therefore, either of these are ordered, a metallic instrument must be used.

(*a.*) *To give an enema—clyster—or injection into the bowel.*—The instrument must be prepared by first trying it with water and noticing whether it acts properly and is clean. The nozzle, the point of which must be smooth and rounded, for if it is sharp or rough it may cause much pain and perhaps injury, is then to be greased or oiled. The midwife, placing her finger on the end of the nozzle, pumps the instrument full, and then introduces the nozzle with the utmost gentleness through the 'anus,' § 36. If there are piles, or the opening is tender, it is well to open the passage slightly by pressure with the finger and thumb on each side of it, and then the nozzle being applied, it will pass without difficulty, as the anus contracts. The nozzle must be passed up to the stop, and held firmly in position, while with the other hand the midwife pumps the injection slowly and

continuously, taking especial care that the tube in the basin does not escape above the surface of the liquid, as air instead of fluid would then be thrown up into the bowel. The usual quantity of liquid used in an enema to clear out the bowels is about a pint. A simple enema is soap and water, or an ounce of castor oil in a pint of thin gruel.

(*b.*) It is sometimes requisite to give an enema, clyster, or injection for the purpose of quieting the bowels and restraining their action, or for the relief of pain and irritation about the womb. The fluid commonly used is thin starch. As the quantity to be used must necessarily be small, or it will be thrown out of the bowel, the instrument should be an indian-rubber ball and single tube which will hold a little more than the quantity to be thrown up, that is about three table-spoonfuls. The ball is filled by squeezing it so as to expel the air, and then holding it with the nozzle in the liquid, which will enter the ball as it is allowed to expand. The ball should not be completely emptied when used, that no air be passed into the bowel.

Certain drugs are occasionally added to clysters which it is the business of the accoucheur to order.

153. (2.) *The catheter.*—The most useful kind is the gum-elastic male catheter, No. 6. The short metallic female catheter is often useless when the urethra, § 64, is distorted by being pressed upon or stretched by the enlarged womb of pregnancy.

To introduce the catheter. — The instrument must be examined and water passed through it. It must be clear inside, and quite smooth outside. An old catheter becomes rotten, and the midwife must take great care not to use such, as great difficulty will follow the breaking of a piece off in the bladder or urethra.

The instrument when about to be used should be oiled, but *not* greased, as lard is apt to choke the eye of the instrument.

The woman is best placed on her left side, with the knees well drawn up, and her hips at the edge of the bed.

The midwife, separating the lips of the vulva, finds the opening of the urethra, § 35, and holding the catheter between her forefinger and thumb, like a pen, gently introduces it into the passage ; when she has passed it about 2 inches she places her finger on the end of the catheter, so as to prevent any urine running into the bed. She knows when it is in the bladder by finding the end move freely, and she then withdraws her finger and receives the urine into a proper vessel. It is sometimes convenient to attach a piece of indian-rubber tubing to the end of the catheter, and let the open tube fall into a vessel placed on a chair or the floor. As the urine ceases to run the catheter should be withdrawn a little, and more will probably flow out, for as the bladder empties it contracts and so shuts upon the eye of the instrument. As the catheter is withdrawn from the urethra, the forefinger should be placed on the free end, and this will prevent the urine that is in the instrument from dropping over the bed, as it is removed from the patient to the vessel.

Immediately after the catheter has been used, it must be washed out by drawing it through clean water, and then wiped dry.

154. (3.) The *speculum*, though perhaps not a necessary, is a useful addition to the bag. It is a tube of vulcanite, lined with glass, about six inches in length. The medium size is the most useful. It should have a wooden plug to facilitate its introduction into the vagina. The midwife separates the lips of the vulva, and passes the instrument, previously oiled, first backwards, and then in a slightly upward direction, allowing the plug to be pressed out as it reaches the cervix. The instrument is of use for applying the douche, § 158, and for plugging the vagina, § 88.

(4.) Scissors to divide the navel-string—both the points must be rounded.

(5.) Whitey-brown thread for ligatures.

(6.) A bottle of smelling-salts.

(7.) Nursery-pins for the binder.

(8.) A bottle of 'disinfecting fluid'—either 'Condy,' or 'Chloralum.' The disinfectants in ordinary use are: Chlorinated lime (commonly called chloride of lime), Sir William Burnett's solution of chloride of zinc, Condy's Fluid, Chloralum. Of these, the first two, being corrosive, will, unless greatly diluted, spoil linen; they are best adapted for disinfecting rooms, drains, &c. 'Condy's Fluid' is, perhaps, the most useful for the midwife. There are two fluids, the green and the red; the latter is to be preferred. Chloralum is sold either as a powder, or as a fluid. Full directions for the use of both Condy's Fluid and Chloralum are printed with the bottles in which they are sold. Other substances, as carbolic acid, sulphur, &c., do not require further description in this place.

155. On seeing her patient the midwife should first comfort and encourage her, if she is depressed and anxious, and having won her confidence, satisfy herself on the following points:—

(1.) As to the general state of health, whether it is more disturbed than should be the case in ordinary labour. If there are symptoms of a feverish condition, or tendency to convulsions, delirium, mania, or any signs demanding skilled medical aid, the midwife should advise a consultation without delay. Enquiry should also be made as to the health during the pregnancy.

(2.) Whether the woman is really pregnant. Cases of supposed pregnancy are not uncommon. Enlargement of the belly from flatulence or wind, from dropsy or from tumours, has been mistaken for pregnancy; and the contrary case has, perhaps, been more frequent, where the existence of pregnancy is denied and the symptoms referred to other causes. By careful observation as to the presence or absence of the signs already detailed, § 52, and by examination of the womb, the truth may be arrived at; but if there is any doubt, and great difficulties often present themselves, the

accoucheur should be called in to investigate the case. The woman, by contracting the muscles of the belly, may render it difficult to carry out the examination.

(3.) The duration of the pregnancy: see Part II., Chap. II. p. 28.

(4.) Whether the labour has commenced: see Part III., Chap. I. p. 56.

(5.) How far the labour has progressed, noting the strength, duration, and frequency of the 'pains.'

(6.) Whether the child is alive. The child is always assumed to be alive until there is proof adduced to the contrary, §§ 97, 181.

(7.) The presentation and position of the child, § 112.

(8.) The shape of the basin (*pelvis*), § 32. For irregularly shaped or deformed pelvis, see § 209, &c.

(9.) The state of the soft parts. If the 'passage' (*vagina*) is dry instead of being moist and relaxed, care must be taken not to examine too frequently, and plenty of lard or oil should be used. If the discharge is offensive, of a brownish colour, and unnatural, the 'passage' (*vagina*) hot and tender, serious mischief is probably imminent, and the accoucheur should be summoned: see § 213.

(10.) How the former pregnancies, if any, progressed. Although this is not a point of great value, because the conditions may be wholly different, yet if the presentations in former labours have been unfavourable, or there is evidence of difficulty of any kind, precautions may now, if needed, be specially taken to prevent the recurrence of former obstacles. Of course a first labour is as a rule more tedious than subsequent ones.

156. The midwife should see that there is an abundant supply of hot and cold water, that napkins, vessels to receive urine and the after-birth, the lappet bands and clothing for the infant are all ready, as well as soap and towels for her own use, which last she should not fail to make use of after each examination.

CHAPTER IV.

DIFFICULTIES THAT MAY OCCUR DURING LABOUR—PAINS DEFICIENT AND EXCESSIVE — THE UTERINE DOUCHE—WRONG POSITION, OBLITERATION, RIGIDITY OF THE 'MOUTH' OF THE WOMB—RUPTURE OF THE WOMB AND OF THE PERINEUM—SWELLING AT 'THE PRIVATES'—THE NAVEL-STRING—THE AFTER-BIRTH—HÆMORRHAGE AFTER DELIVERY—INVERSION OF THE WOMB.

157. DIFFICULTIES may occur in the progress and completion of 'ordinary' labour from irregularity in the 'pains,' from certain conditions of the mouth of the womb or of the 'front passage' (*vagina*), or of 'the privates' (*vulva*), or of the 'after-birth.'

158. *Labour-pains* may be irregular in their force and in their direction.

The sensation of pain accompanying the contractions of the womb varies in different women and at different times in the same woman.

The efficiency of the contraction becomes known to the midwife by the effect it produces upon the contents of the womb.

Weak pains are infrequent and of short duration; the womb does not become properly hard and rounded, § 106, and the effect produced upon the opening of the mouth of the womb in the first stage of labour, and upon the advance of the child in the second stage, is insignificant. The sensation also is slight and quickly goes off. Their course is however regular, beginning at the cross-bone (*sacrum*) and proceeding towards the belly. Moreover, it often happens that what the woman calls 'little niggling pains' are really accompanied by regular and effective dilatation of the neck of the womb (*cervix*).

During the first stage of labour, so long as the membranes are entire, patience only is requisite, and no harm happens to either child or mother. The latter should be encouraged to sleep, to take a little food, and to husband her strength. The midwife should not examine the womb too frequently, as irritation of the parts will do harm.

If, however, 'the waters' should burst away before the mouth of the womb is fully open, delay must not be carried too far. If the 'pains' still continue ineffective to open the mouth of the womb, the midwife should with the syringe and vaginal tube direct a stream of warm water (86°) for five or ten minutes, against the closed neck of the womb, and repeat this operation every half hour for four or five times; care must be taken not to inject too violently, but with a steady stream.

To administer this '*uterine douche*,' the patient should be brought with her hips to the edge of the bed, which is to be guarded with some india-rubber sheeting or American leather cloth; a doubled towel should be placed under her, a basin being held so as to catch the water as it flows away from the 'passage' (*vagina*). The most convenient mode of applying the douche is to make use of a speculum, § 154 (3), by the aid of which the stream can be directed with certainty, and there is less risk of wetting the bed. If no effect is produced, the accoucheur must be sent for without farther delay. The midwife is not justified in giving ergot of rye[1] in such a case on her own responsibility.

159. If the labour-pains continue weak and useless after the waters have burst away, and the neck of the womb (*cervix*) is fully dilated, the accoucheur must be sent for, and espe-

[1] This drug is mentioned here in order to forbid its use in unsuitable cases. It ought only to be used under medical advice, for its effects are always uncertain, and it requires scientific knowledge to direct its proper administration. The womb under its influence often contracts irregularly, and sometimes continuously in a very different manner to the healthy intermittent action of ordinary labour. The death of the child has in some cases appeared to be due to its effects.

cially if the labour-pains having originally been strong, but yet unable to make the head advance, have become weak or pass away. The cause is either that the head is unnaturally large for the pelvis, or the pelvis is unnaturally small for the head, § 205, or the position of the head is wrong; the woman must cease all attempts at bearing down, and the sooner the accoucheur arrives the better.

160. Too violent labour-pains may endanger both mother and child. The membranes may rupture before the neck of the womb (*cervix*) is fully dilated, and the child's head may force the womb down to the 'privates' (*vulva*), thus laying the foundation for permanent prolapse or 'falling of the womb,' or may lacerate the neck or the 'passage' (*vagina*), and most likely will tear its way through the perineum, while compression of the navel-string will imperil the child's life. The womb being too quickly emptied of its contents may not properly contract again after the placenta or after-birth comes away, and hæmorrhage may be the result, or the patient may even die of fainting or syncope, § 98, consequent on the sudden change in the condition of the womb from full to empty. It has happened that the child has fallen on the floor before the mother could reach the bed, causing rupture of the navel-string with loss of blood to the child. Should the cord not break there will be the risk of pulling down the womb by the strain upon it.

The midwife will keep the patient as quiet as possible and in bed, forbid all straining, and when the head is on the perineum, guard it carefully, § 137. She may be able to delay the too rapid progress by passing her finger into the 'passage' (*vagina*), and allowing the head to press against it. The aid of the accoucheur will probably be requisite.

Wrong direction—Obliteration—Rigidity of the Mouth of the Womb.

161. The mouth of the womb (*os uteri*) may be directed backwards, forwards, or sideways, to such a degree as to render detection by the finger very difficult, § 75.

When the mouth of the womb is directed very far backwards, the cause is usually pendulous belly, §§ 67, 133; the position should be corrected by the application of a broad bandage, and the woman should lie upon her back until the first stage of labour is over, and the head has passed the brim.

When the mouth of the womb is directed extremely to one or other side the woman should lie on the same side to which the mouth of the womb is directed, so that the body of the womb may fall over to the opposite side.

162. The mouth of the womb may be entirely closed up, or obliterated, the result of former inflammation. In such case or whenever the midwife finds any extraordinary condition, she should send for the accoucheur.

The mouth of the womb may be preternaturally rigid, and after opening to about the size of a shilling or more cease to expand. The midwife may use warm-water injections with the syringe (uterine douche, § 158), but if these are ineffective and the woman is beginning to suffer, and especially if the waters have unfortunately burst away, the accoucheur must be sent for.

163. It may happen that, the mouth of the womb being directed backwards, although it is well open, the anterior lip is pushed before the head, so that it descends very low, and may become squeezed between the head of the child and the bony 'basin' (*pelvis*) of the mother.

In such a case the midwife may pass one or two fingers during an interval between the pains and, waiting till the next pain comes on, endeavour then, but not roughly, to push up the protruding lip over the head.

If the midwife find the mouth of the womb distorted by any swelling, or the edges knotted, or any tumour hanging from the neck, she must call in the accoucheur.

Rupture of the Womb.

164. The neck may rupture or split, giving rise to hæmorrhage. The body of the womb may rupture or burst, and the

child pass through the opening into the belly. When this terrible accident occurs, the woman often shrieks with sudden pain, and has the sensation that something has broken internally; the midwife feels the body of the child through the walls of the belly, as though just under her hand, the limbs being much more perceptible than previously. Faintness comes on, the face becomes pale, the eyes dull, a clammy sweat bedews the body, and the limbs tremble. The labour-pains cease, and blood flows from the 'front passage' (*vagina*). The accoucheur must be sent for, and the woman kept alive by giving her brandy, and laying her on her back with her head on a lower level than her body.

165. The 'front passage' (*vagina*), § 37, sometimes appears, especially in aged women who are pregnant for the first time, so narrow and rigid as though it would obstruct the passage of the child; fortunately the obstacle is generally apparent rather than real, and by waiting patiently full dilatation is gradually accomplished.

If, however, there is a deficiency in the proper moistness, warm injections of oil mixed with white of egg may be used.

If there is tenderness and heat mischief is impending, and the accoucheur must be called in, as also if the vagina seems narrowed by bands of tissue, the result perhaps of former inflammation, or if there are warty growths or swellings of any kind.

It sometimes happens that growths from the womb (polypi) or tumours project into the vagina. If any such are found the accoucheur must be sent for.

166. The 'front passage' (*vagina*), § 37, may prolapse or 'fall down' outside 'the privates' (*vulva*), from causes existing either before or during the pregnancy. If there is any tendency to this falling of the vagina, the midwife must take care to empty the bladder with the catheter, if the urine has not been lately passed, and as the head advances, must endeavour to keep up with two fingers, the

fold of the vagina which is almost always the upper portion, so that the head does not push the vagina before it. If, however, the birth is retarded by the loose vagina, and this is in danger of being injured by pressure, she must send for the accoucheur.

167. If 'the privates' present flat warty growths and sores, consequent on venereal disease, the midwife must be very cautious lest she should become infected by touching these places, and should anoint them as well as her fingers with oil; a wound or cut upon the finger should be protected by sticking plaister. By carefully oiling her fingers before an examination, and washing them thoroughly afterwards in diluted disinfecting fluid, she may secure herself from infection. Any instrument as a catheter, clyster-pipe, or vaginal syringe must after use be washed in hot water; any sponge, lint, &c., must be burnt. It is the duty of the midwife to urge the patient to seek medical advice, as the disease will increase if not properly treated.

168. Rupture of the Perineum, § 36, is more frequently caused by 'bad practice' than otherwise, for example, by attempts to push the perineum over the child's head, or to dilate it with the fingers; by giving ergot in unsuitable cases, and the consequent violent contractions of the womb, driving the head or other presenting part of the child through, instead of along the perineum. It is apt to occur spontaneously, either when the pelvis is too large, § 210, or when it is contracted, § 211; the head of the child in such a case being directed downwards and backwards, instead of along the proper 'line of descent,' § 34.

If the midwife has any fear that tearing or laceration of the perineum will occur, she must send for the accoucheur; as also if such an accident should occur, as sometimes happens in spite of all care and dexterity, the midwife must not think that the tear or laceration will heal up of itself, as great mischief may ensue later on if surgical aid is not called in.

If the midwife finds the scar of an old tear, or rupture, she should send for an accoucheur, as the scar will perhaps not dilate when the head presses down, and either the labour will be retarded, and the child's life in danger, or there will be great risk of a repetition of the former misfortune.

169. *Swelling of 'the Privates'* or *Tumour of the Vulva* (thrombus).—Usually some pain is felt at the part, and presently a swelling begins to form, which may increase rapidly or during the course of some days. The swelling may be so large as to interfere with labour. As the swelling gets larger it becomes harder and more painful, and looks bluish. If it burst, profuse bleeding perilous to life occurs. The accoucheur must be sent for. If the swelling begins during the actual progress of labour, pressure should be made upon it with a sponge wrung out in iced water. If it burst, the midwife should try and control the bleeding by keeping firm pressure upon it with a doubled pad of lint, pressing the whole mass against the bone. If ice is at hand, a piece should be held against the wound. If no bleeding takes place, and only a lump is found after the labour has ended favourably, the accoucheur must be called in, as an abscess will probably form, and may be the cause of great danger to the mother.

The Navel-String.

170. The navel-string or umbilical-cord may prolapse or fall down before the presenting part of the child, either before or after the bursting of the membranes.

This is a most serious accident, as the cord is likely to be pressed upon, and the child's life be consequently imperilled by the stoppage of the circulation. Immediately, therefore, this condition is recognised, the accoucheur must be sent for. It is sometimes difficult before the membranes are broken to distinguish between the navel-string and a fold of the membranes, but the cord is always to be known by the

pulsation in it, and as long as that continues regular the child is safe.

The cord is more apt to fall down when the presentation is extraordinary, as, if one of the limbs presents, or if the 'basin' (*pelvis*) is deformed.

When the cord falls down outside 'the privates,' it must be replaced within the 'passage' (*vagina*), and kept there by a wad of cotton or sponge, until the accoucheur arrives.

The patient must be specially cautioned against straining or bearing down.

171. When the navel-string is long it not unfrequently is found coiled round some part of the child and, by preference, round its neck. If this occurs when the child is being born, the midwife must, as already directed, § 144, endeavour to slip the cord over the head of the child. Great care must be observed not to tear the cord from the after-birth, or from the body of the child. If the cord is not long enough to allow of this operation, the loop must be opened sufficiently to allow the shoulders to slip through. In the rare case where the cord is so short as to risk tearing or dragging upon the after-birth, the midwife should divide it with the scissors, taking care to hold the end nearest the child tightly betwixt her finger and thumb, to prevent loss of blood, until she can tie it with the proper thread or ligature.

172. If the navel-string is torn from the body of the child, so that no thread can be tied round it, the midwife must stop the bleeding by pressure, placing a doubled piece of lint upon the wound, and keeping her finger upon it until the accoucheur arrives.

173. The cord is sometimes knotted, and these knots may have been the cause of the death of the fetus in the womb, though usually they produce no ill effects. The midwife can do nothing. Swellings are often found on the cord, which at first look like knots, but are not so really. These are of no practical importance.

The Placenta.

174. *The after-birth*, § 144, may fail to come away. The cause of the retention may be—(*a.*) That the womb is exhausted and the necessary contractions are either altogether absent, or too weak to detach the after-birth ; or (*b*), to expel it though already detached.

(*c.*) The contractions may be strong but irregular, acting on a portion only of the womb, instead of involving the whole organ, and consequently the after-birth gets shut up instead of being expelled.

(*d.*) The after-birth may be morbidly adherent, glued to the womb in some part from previous inflammation, and the womb can neither detach nor eject it.

When the after-birth is retained because the uterus is inactive, as in (*a*) and (*b*), the chief danger to be dreaded is hæmorrhage. Hæmorrhage coming on from want of contraction in the womb, and at this time or later, is called *post-partum hæmorrhage* (post, *after*, partum, *the birth*), or 'flooding.' The womb can usually be felt enlarged and soft, or it may be so soft as to be undistinguishable to the hand through the walls of the belly. If there is hæmorrhage externally, or if the signs of internal hæmorrhage present themselves, § 77, the after-birth is detached to a greater or less extent.

If, on examination, the finger passed along the cord to the neck of the womb does not reach the place of its insertion into the after-birth, the latter is still within the womb, but if the membranes are within reach, the after-birth is at least partly, if not wholly, in 'the passage' (*vagina*) ; if it is lying in 'the passage' it should be at once removed, § 144.

If there is no bleeding, but the after-birth is within the womb, the midwife can wait an hour and a half to allow the womb to recover from its exhaustion, and should then by rubbing and kneading the belly, but not roughly, endeavour to excite the womb to detach and expel the after-birth. If the womb does not respond to these efforts, no further time should be lost in sending for the accoucheur.

There must be no undue pulling at the cord, which should be merely held tense, not dragged at, for it has happened, that the cord and membranes have come away filled with a clot of blood, and been mistaken for the after-birth, which itself was left in the womb to the great peril of the mother. A careful examination of the mass brought away will prevent such a mistake, and afford time to remedy the mishap if it should occur.

If the after-birth is retained and the womb is firmly contracted, a condition which has been styled 'hour-glass' contraction, the accoucheur must be sent for, as also if the after-birth is adherent and the womb is not firmly contracted.

The midwife must bear in mind that in both these cases the longer the patient is left without proper aid, the more perilous her condition will become.

Post-partum Hæmorrhage—Flooding.

175. If there is hæmorrhage, the accoucheur must be sent for at once, for there is no knowing to what extent it may go on. While waiting his arrival the midwife should dash some handfuls of cold water on the naked belly, and slap the buttocks, thighs, and 'privates' or vulva, with cloths dipped in cold water. If ice be at hand a lump may be passed into 'the passage' (*vagina*).

The midwife must understand that it is only the sudden shock from the cold dash that causes the womb to contract, and must not, therefore, leave the cold appliances to soak about the bed and the woman's person. She must, alternately with the cold dash, rub the belly and knead it, but not too violently so as to bruise the parts, or mischief will result. She must keep the woman on her back with her head low.

'Hæmorrhage' or 'flooding' may continue or commence after the removal of the after-birth. The accoucheur must be sent for, and meanwhile the midwife must proceed as above. If the accoucheur is not at hand, the midwife may give a dose of ergot of rye (see note, p. 85). There are two forms of this drug: the liquid extract, and the ergot in corns.

Of the first, half a drachm may be given in a little water, and repeated, if necessary, in an hour. Of the second, a tea-spoonful should be bruised in a mortar to a coarse powder, on which a wineglassful of boiling water should be poured, and the whole drank when cool. Ergot will not keep in powder, and damp quickly destroys its virtue. Plugging the vagina, § 88, is not permissible, because it would probably convert *external* into *internal* hæmorrhage, § 77.

If the hæmorrhage ceases, the midwife must be careful in examining the 'passage' (*vagina*) not to disturb any clots. She should place a hard substance, as a book or heavy pin-cushion, or a sand-bag outside, over the womb, and strain the binder, § 149, over it, and leave the woman thus bound up for twenty-four hours, watching, of course, to see if there be any return of the bleeding.

Inversion of the Womb.

176. *Inversion*, or the turning inside-out, of the womb is of very rare occurrence. It has been ascribed to the act of unduly pulling upon the navel-string while the after-birth is adherent, but it may occur spontaneously. The fundus, or bottom of the womb, descends and passes through the mouth of the womb just as a bag may be turned inside-out. The whole organ may appear outside the 'privates.'

The patient is usually seized with vomiting, fainting, and extreme prostration.

The accoucheur must be sent for immediately, and meanwhile the midwife must keep the patient quiet, giving, from time to time, small quantities of cold brandy and water, and tea-spoonfuls of strong beef tea.

The midwife must not attempt to remove the after-birth, but, laying over the mass a doubled napkin, she may apply gentle, firm, and even pressure to it; it may be that the womb will return into its place; but if, as is most likely, it remains inverted, and if there be much hæmorrhage, the midwife must apply cold wet cloths, and support it so as to prevent

any dragging or straining, and make no further attempts to replace it nor to separate the after-birth, but wait the arrival of the accoucheur.

The accompanying figure (31) shows the womb inverted, the front having been cut away to exhibit the Fallopian tubes and ovaries which are drawn down with the womb. The inner surface has now become the outside surface of the womb. The vagina, of course, partly follows the womb.

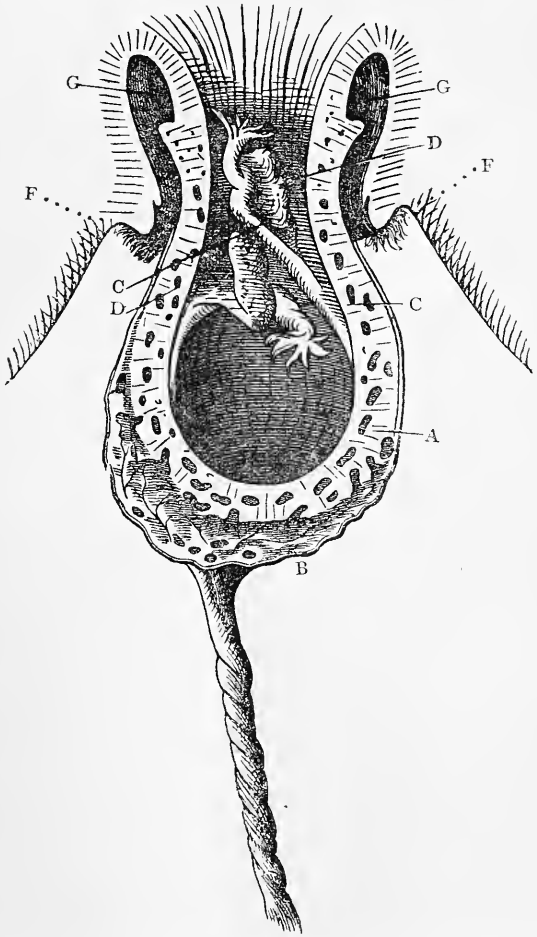


FIG. 31.—A, the cut edge of the fundus of the womb; B, the placenta with its navel string; C C, the Fallopian tubes; D D, the ovaries; F F, the lips of the vulva; G G, the inverted vagina.

CHAPTER V.

DEBILITY—ILLNESS—VOMITING—FAINTING—CONVULSIONS—PARALYSIS—DEATH AND APPARENT DEATH OF THE CHILD DURING BIRTH.

177. If the midwife on being called to a case, finds the patient suffering from excessive weakness or decided illness, she must call in the accoucheur and decline all responsibility.

Vomiting, if the patient is in the first months of pregnancy, §§ 53, 61, unless very excessive, is of little consequence, and if caused by undigested food should be assisted by drinking one or two tumblers of warm water. If, however, it is very persistent and exhausts the patient, medical advice should be obtained. During the last two months of pregnancy violent vomiting may imperil the pregnancy and bring on miscarriage. Vomiting may be symptomatic of an attack of fever. At any time if vomiting occurs without any assignable cause, a medical opinion should be taken.

178. *Fainting* (syncope), § 92, not caused by mental emotion or disorder of the stomach, &c., and being more than a passing qualm, is very significant in a lying-in woman of uterine hæmorrhage, and attention must be specially directed to this point, as, though there may be no outward show, the womb may possibly be filling with blood, § 175. The accoucheur must of course be called without delay, if there is any suspicion of hæmorrhage: see Part II. Chap. IV.

179. *Convulsions* may occur either before, after, or in any stage of labour. They usually commence in the face. The eyes are opened and shut repeatedly, and glare wildly without any sense. The mouth is drawn to one side. The jaws

are opened and shut violently. The tongue is repeatedly thrust out and drawn in again, and may be bitten severely. The head is rolled from side to side. The bosom heaves. The limbs are drawn up, and again extended, the hands being clenched and relaxed alternately. The whole body is sometimes forcibly bowed forwards and backwards. The countenance changes; sometimes it becomes dark and swollen, sometimes it is pale and pinched. From the mouth issues foam, perhaps mixed with blood. Consciousness is entirely lost. After a few minutes the convulsion goes off, but the patient lies, breathing heavily, in a deep sleep. The convulsion may shortly return, and a succession of fits recur rapidly, or the patient may come to herself.

The accoucheur must be sent for even if the fit goes off, as both mother and child are in great peril. In the meantime the midwife must see that all the clothing is loose, that the patient is laid upon the bed, and restrained from hurting herself, that there is plenty of fresh air, and that the friends do not crowd round the bed or in the room. The face may be sprinkled with cold water, but the patient must not be deluged. If the tongue is likely to be bitten, a piece of firewood should be held between the teeth. If the head is hot, a cold wet folded handkerchief may be held to the forehead. Nothing else should be done without medical orders. Burning feathers under the nose, beating the palms of the hands, attempting to force drink when the patient is unconscious, are useless expedients, and may do harm.

If the accoucheur is delayed in coming, a clyster of warm soap and water may be thrown into the bowel, § 152, and the urine may be drawn off with the catheter, § 153.

Convulsions are often preceded by swelling of the face and limbs (dropsy), by headache, loss of sight, ringing sounds in the ears, twitchings of the arms or legs, pains in the loins. They are more common in first pregnancies, and in after labours when they have occurred at a previous one, than in ordinary repeated pregnancies.

180. *Paralysis*, or loss of motion, may occur either as a sequel of convulsions, or without very palpable warning. The patient suddenly finds she cannot move the limbs on one side of her body, or both the legs may have lost their power. In the former case the face is frequently drawn to one side, and the speech somewhat affected. The cause lies either in the brain or spinal cord, and though the labour will probably go on regularly, the patient's life and health are in great peril. As a rule, recovery, though at some distance of time, gradually takes place.

Of course the accoucheur must be sent for without delay.

Death and Apparent Death of the Child during Labour.

181. If the signs of death, § 97, have been observed, the midwife will be confirmed in her opinion if she finds the 'waters' bloody or fetid, and if, on examination, she feels the scalp flaccid and the bones of the head loose. If the breech present, the finger will pass readily into the fundament, which will not contract upon the finger as when the child is alive: this, and the free escape of meconium, or the contents of the child's bowel, § 231, is strong evidence of death. If the child has been dead some little time, the skin will peel off in patches, and putridity will, perhaps, have commenced. If there is any idea that the child is not alive, the accoucheur must be called, for there may be a possibility of saving the child, or at least of preventing mischief to the mother.

182. But if these signs are wanting and delivery is accomplished the child may be only *apparently* dead, and though the limbs hang motionless, and the head falls on one side, and the mouth gapes, and the pulse in the navel-string can only be felt at intervals, or perhaps not at all, yet life may possibly be restored.

The mouth of the child should be cleared of slime, and a dash of warm or cold water be thrown on its face and chest: the buttocks and chest should be slapped smartly with the corner of a towel dipped in water until the child gasps. If

these means are unavailing, the cord must be separated, and if the face is blue with congestion, a spoonful of blood may be let escape from the divided cord. The child must then be laid in a hot blanket, and the limbs and body chafed with a warm cloth; then, taking up the child underneath the arms, the midwife must plunge it into a vessel of cold water up to the armpits, take it out, and again rub the body dry with warm cloths. This can be repeated two or three times. The midwife may sprinkle a spoonful of brandy over the child's chest, or pour a small stream of water from the height of a yard upon it. As long as there is the slightest pulsation of the heart there is a possibility of restoring the suspended animation, and the most effectual mode is *artificial respiration*, which the accoucheur will know how to employ. If, however, the heart has quite ceased to beat for three or four minutes, all efforts are vain.

Children who have been apparently rescued from death are often very weakly, and are very apt to die in the course of a few hours, or even a week after such recall to life.

CHAPTER VI.

EXTRAORDINARY LABOUR.

183. When the posture of the child in the womb is such that the head presents with the forehead at the right share or pubic bone, and the back of the head (*occiput*) at the left sacro-iliac joint, § 26, the head is said to be in the third 'position.' When the forehead is at the left share-bone, and the occiput at the right sacro-iliac joint, the head is said to be in the fourth position.

On *external* examination, § 72, the limbs of the child are more easily felt than when it presents in the first and second positions, because they are turned towards the front of the mother's belly. The beat of the fetal heart is often less audible because, when the front of the child is much turned

towards the front of the mother, the pulsation of the heart has to be listened for through the waters which lie between the breast of the child and the womb, instead of being communicated directly to the ear through the back of the child and the solid wall of the womb, which in the first and second positions are closely applied to the front of the mother's belly.

On *internal* examination the shape of the neck of the womb, § 39, will be found different to that in ordinary labour. It is usually lower in the 'passage' or vagina, and the posterior lip of the mouth of the womb is much depressed, instead of the anterior; the finger, too, will pass up higher between the neck of the womb and the share-bone (*pubes*), the angle being more acute.

When the mouth of the womb is sufficiently dilated for the finger to touch the head, the large lozenge or diamond-shaped *anterior* fontanelle is felt instead of the small triangular *posterior* fontanelle, § 118.

In most cases the head turns half round (or rather makes a one-third turn) when in the hollow of the basin or cavity of the pelvis, so that the face looks towards the cross-bone or sacrum, and the labour continues as though the head had presented in the first or second position; 'but sometimes the head descends and does not make the turn, but the forehead continues in the anterior semicircle of the basin (*pelvis*). The head becomes more and more bent upon the chest until the large anterior fontanelle, § 118, is placed beneath the pubic arch or arch of the share-bone. The back of the head (*occiput*) sweeps along the perineum distending it far more than in "ordinary" labour, and passes out at the "privates" (*vulva*) first, followed by the forehead and face.'—*Swayne.*

This labour is usually more tedious than 'ordinary' labour, and there is far greater risk to the perineum from the head and also from the shoulders, but it generally terminates favourably.

184. Should the head become arrested, or any difficulty be feared, the accoucheur must be sent for, as instrumental aid may be required.

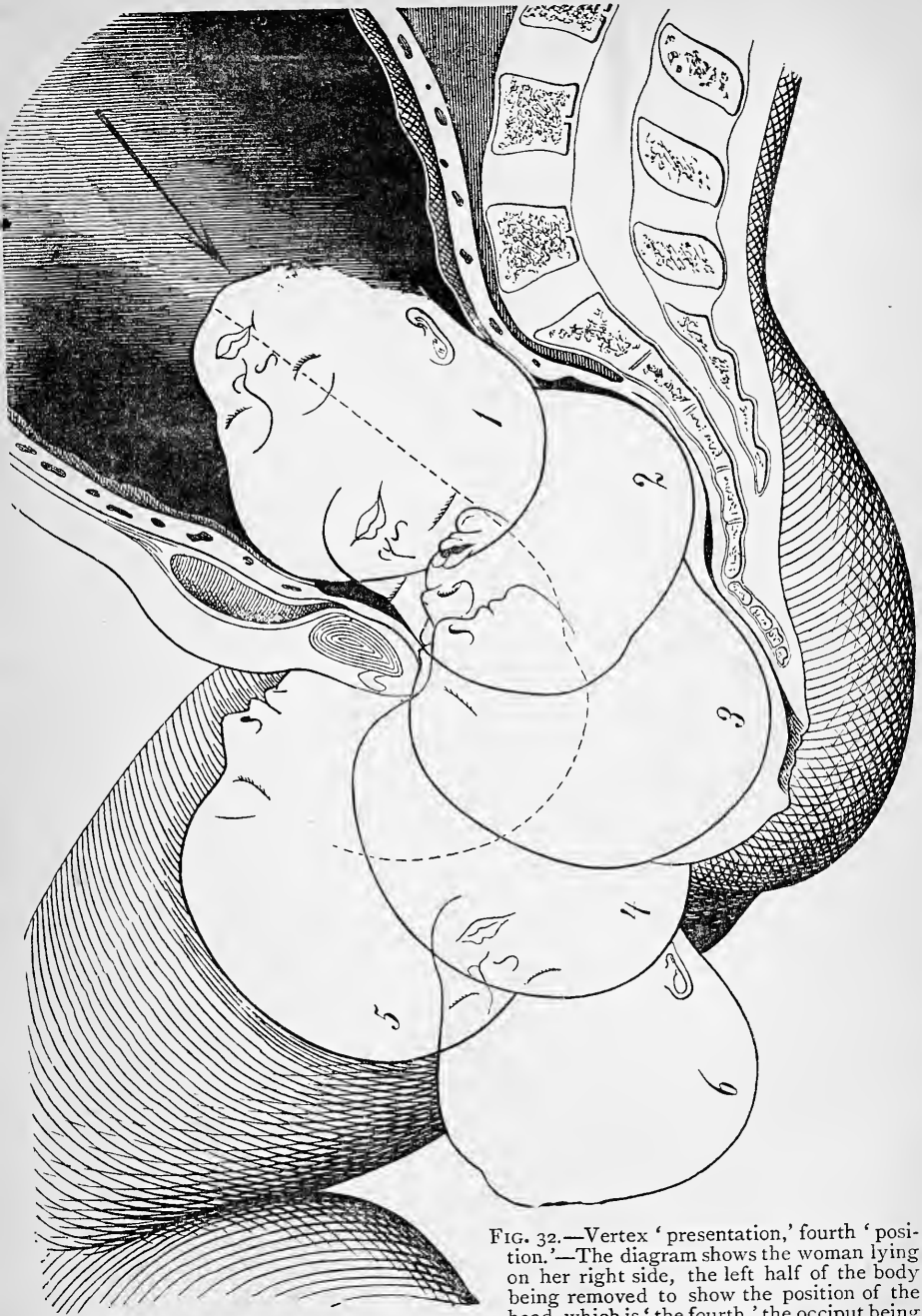


FIG. 32.—Vertex 'presentation,' fourth 'position.'—The diagram shows the woman lying on her right side, the left half of the body being removed to show the position of the head, which is 'the fourth,' the occiput being at the right sacro-iliac joint and forehead at the left acetabulum or hip joint. The dotted line is the 'line of descent,' § 34. The figures show the position of the head at different periods of the labour; the coccyx is bent backwards to afford the greatest possible extension at the outlet.

The midwife must understand that whenever any instruments are used, and especially 'the forceps,' the earlier an operation is performed the better for the mother, as her strength is less exhausted. She ought not therefore to delay in sending for aid as soon as difficulty arises, nor wait until exhaustion imperils the life of the mother.

185. The head may attempt to descend through the brim of the pelvis or 'basin,' with its 'long' diameter corresponding to the 'transverse' diameter of the brim; or across the 'basin' (*pelvis*), and then become jammed and not make 'the turn.' Delivery cannot be effected in this position of the head, and therefore the accoucheur must be sent for. This is termed the fifth or sixth position, according as the occiput is at the right or left ilium of the mother.[1]

186. The neck may be bent sideways so that *the Ear* presents. Both this position as well as the last are very rare, and if found the midwife must call in the accoucheur. The delay in the labour will be a sufficient reason for sending for aid, even if the exact state of the case be undiscovered.

187. *Brow Presentation.*—If the forehead is pressed downwards so much in advance of the whole head that *the brow* presents, a very difficult situation arises; and the labour cannot be accomplished naturally unless the direction is altered; happily when the head is not too large it sometimes changes into the first or second position, § 121. More frequently it becomes a *face* presentation.

A Brow Presentation is recognised by observing that, in the first stage of labour, the vertex lies high above the brim

[1] Summary of positions in head or vertex presentations :—

First position,	occiput at left pubis	forehead at right sacro-iliac joint.
Second ,,	,, at right ,,	,, at left ,, ,,
Third ,,	,, at left sacro-iliac joint	forehead at right pubis.
Fourth ,,	,, at right ,,	,, at left ,,
Fifth ,,	head across pelvis	occiput at left ilium.
Sixth ,,	,, ,, ,,	,, at right ,,

Of these positions the first is of the most frequent occurrence and next the fourth; the second, and third, are less frequent; the fifth and sixth are very rare.

of the pelvis almost out of reach of the finger; and in the second stage, when some of the waters have escaped, the lozenge-shaped great fontanelle can be readily touched with the remaining finger and also the upper part of the face. If the pains are strong and the head not jammed, the rectification of the wrong position may sometimes be assisted by pressing with the finger on the forehead during the pain with the object of hindering the further descent of the forehead, and thus altering it into either a vertex or face presentation according as the child is turned towards the back or front of the mother. The position, however, is so likely to involve difficulty and, therefore, danger to both child and mother, that the midwife had better send for the accoucheur immediately she suspects a brow presentation.

Face Presentation.

188. When the *Face* presents, it descends into the pelvis or 'basin' until the vertex, § 113, impinges on one ischium, § 28, and the chin on the other. The chin then gradually turns forward, appears under the arch of the share-bone or pubes, and first emerges; the forehead, vertex, and occiput, successively sweeping along the perineum.

The face may be recognised by the hard projections of the forehead, the nose, and the rim of the *orbit* or bony socket of the eye. After the waters escape the finger will feel the openings of the nostrils and mouth, and the tongue and gums.

After the features have become swollen by pressure during the tedious labour the *face* may be mistaken for the *breech*: but the *breech* is rounder, smoother, and wants the projections just mentioned, and the finger after passing through the fundament or anus returns covered with meconium, § 231, or excrement. External examination will, perhaps, also show the direction of the child.

If a *face presentation* is suspected, the utmost gentleness and care must be used in examining, or the skin of the face may be injured: an eye has been scooped out! The friends should be warned to expect great disfigurement; for the

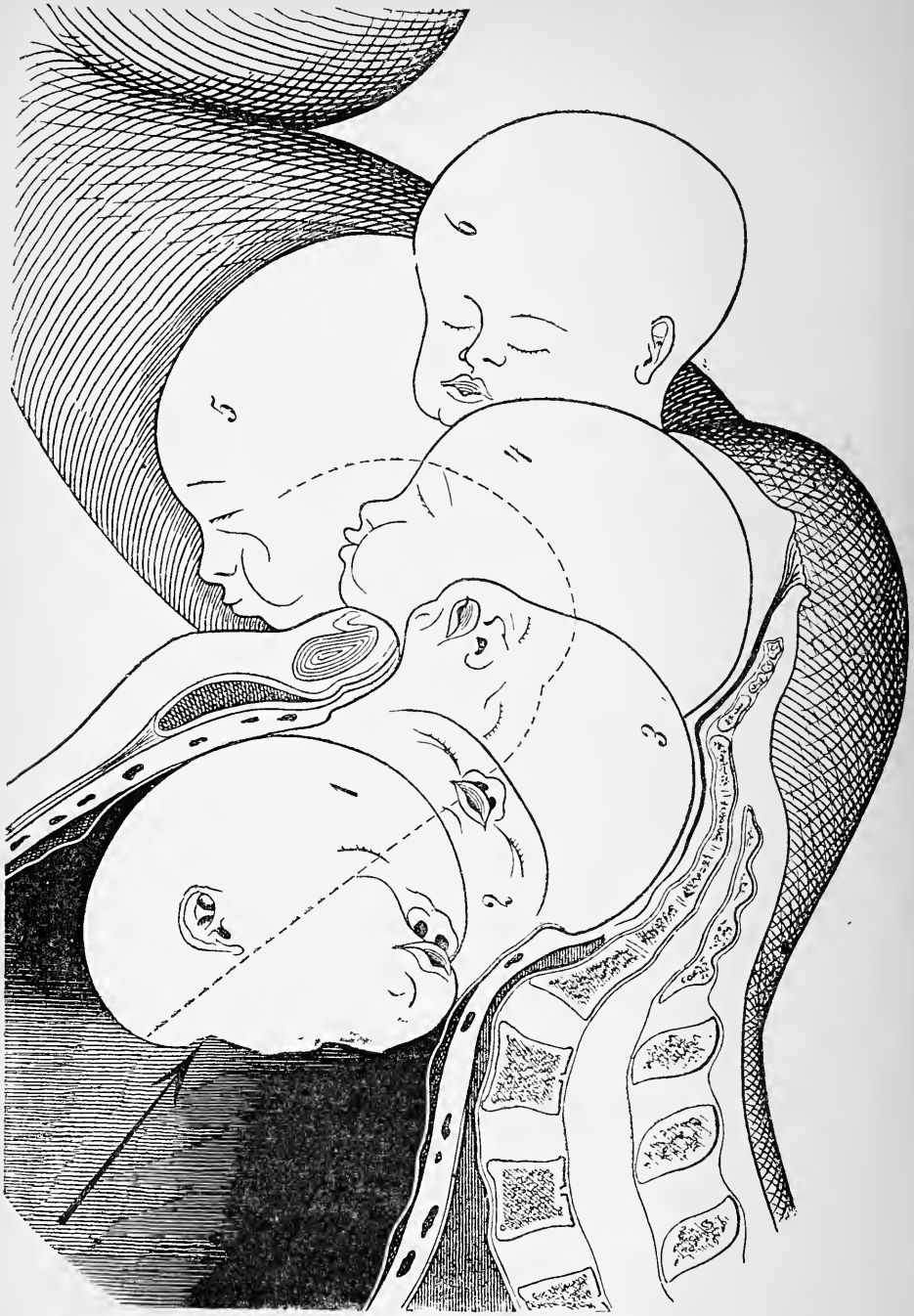


FIG. 33.—Face presentation.—In this figure the child is lying with its back to the left of the mother; the right half of the abdomen has been removed. The head turns in its descent. The right corner of the mouth comes to the vulva first, then the right cheek, then the nose and right eye.

cheeks and eyelids become greatly swollen and even blackened if the labour, as is usual, is protracted.

As a general rule *face presentations* terminate by the natural efforts. If, however, the head is arrested, or if the chin does not emerge from under the share-bone or pubic arch, assistance will probably be necessary, and the midwife must send for the accoucheur. There will always be a much greater strain on the soft parts, and therefore greater risk of tearing them than in ordinary labour.

Descent of an Arm or Foot alongside of the Head.

189. The midwife sometimes becomes aware, on internal examination, that some member of the body is presenting alongside of the head, and in such a case will fear that the rush of the waters will bring it down. She must keep her patient very still. If she thinks that the hand or foot is at the right side of the mother, let her place the patient on her left side, in hopes that the womb inclining towards that side will draw up the depending member.

If, after the waters have broken, *the hand* is found alongside of the head, the midwife must wait and see whether the hand will retreat, or whether there is room for both the head and hand in the pelvis. If, however, as mostly happens, the hand causes obstruction, and the birth is delayed, the accoucheur must be sent for.

190. If *a foot* descends alongside of the head the accoucheur must be called in at once.

Breech—Knee—Foot Presentations.

These should not be undertaken by the midwife unless she has seen the management of similar cases by skilled hands.

191. *Breech presentation* (Fig. 26) may often be recognised by external manipulation. The womb is not so egg-shaped as in head presentations. *Externally* the head of the child can be felt as a hard round substance at the base of the womb

instead of the less defined limbs. *Internally* either nothing can be distinctly made out, or a small member or a broad soft mass, the buttock, may be felt.

When the neck of the womb is open the presentation can usually be determined, and after the waters have passed it is the duty of the midwife to be certain as to the exact presentation and position.

The *Breech* is known by the soft cushion of the buttock having a hard blunt projection, the tuber ischii or seat-bone, § 28, in the centre; if both buttocks present the pointed coccyx or tail-bone may be felt between them. After the membranes are ruptured the parts of generation in the male child are distinguishable, and if the finger is passed into the bowel the anus, § 36, can be felt contracting upon it, and it becomes soiled with meconium.

192. *Management of a Breech Case.*—In favourable cases, where the soft parts are distensible, the action of the womb powerful, the 'basin' (*pelvis*) well shaped and the position of the child advantageous, that is, when it faces towards the back of the mother, and the head and arms are well bent upon the chest—labour may terminate without any help; but in many cases the midwife must be prepared to assist at the proper time.

The most important rule in *breech* presentations is *not to be in a hurry* during the *second* stage until the hips of the child have been expelled by natural efforts. The slower this is effected the better for the mother, as her soft parts are thus dilated gradually, and so are less liable to be injured.

When however thus much of the labour is over, the womb often ceases to act, and delay then takes place, full of peril for the child, for the circulation through the navel-string may be hindered by pressure between the head and the brim of the 'basin,' § 23, or by the cord being too much stretched if it happens to be short. The midwife must therefore, as soon as she can reach the navel, draw down the navel-string gently in a loop, to guard against the chance of any

dragging at the navel; if it beats naturally there is no danger, but if the pulse in it becomes faint and slow, or the limbs of the child start convulsively, there is pressure on the cord, and delivery must be effected without delay if the child's life is to be saved. The midwife must therefore excite the womb to act, by giving a cup of warm tea and by gently rubbing the belly and kneading the womb, or a bystander can do this while the midwife supports the body of the child enveloped in a warm cloth. Care must be taken to guide the shoulders by moderate traction so that they pass, one beneath the arch of the pubes or share-bone, while the other sweeps along the perineum.

If the arms of the child have been well crossed over its breast they will have passed without retarding the birth, but if they are raised above the head they must be brought down. The midwife must pass her two first fingers along the back of the child over its shoulder, and draw down the arm *obliquely* across the chest; if this is done awkwardly, or an attempt is made to drag the arm *directly* down, it will very probably hitch at the brim, and perhaps be broken by the force used; the other arm must be brought down in a similar way. It does not matter which arm is first brought down, but both must be depressed obliquely across the chest.

The shoulders must pass, one beneath the share-bone (*pubes*), and the other into the hollow of the cross-bone (*sacrum*), and so out at the 'privates.' No dragging force is to be used as the shoulders are passing, for there is the danger of the forehead impinging on the promontory of the cross-bone or sacrum, § 26, or on the share-bone, § 29, if the child's face is forwards, instead of entering the cavity of the basin or pelvis obliquely.

The shoulders being free, the midwife now applies one hand at the back, and the other hand at the front of the child, in such a manner that the neck passes between the first and second fingers of the two hands. The head which has passed the brim in the oblique diameter as the shoulders

passed out, can thus be gently turned so that the face and forehead come into the hollow of the cross-bone, and be assisted into the world by gentle traction.

If the head does not readily turn in the 'basin' or pelvis, a finger may be passed into the mouth of the child, or, if possible, a finger should be laid on each side of the nose, and the face gently directed downwards. The utmost tenderness must be observed in this operation, as the jaw-bone may be readily broken, or the soft parts injured by a rough finger.

193. The danger of breech presentation to the child arises from the probability of interruption to the circulation in the navel-string before the child is in a position to breathe air. Now, if the feet are born first, the body of the child is likely to be detained by rigidity of the soft parts, and the navel-string is apt to be so much stretched that the circulation becomes embarrassed. Immediately the blood ceases to circulate the child makes an attempt to breathe, but, of course, can only draw in the slime, blood, and water in which the head is lying. The same difficulty may arise when, the body having been expelled, the head is delayed by the chin or forehead hitching at the brim of the basin or pelvis. Sometimes the navel-string is nipped between the head and the 'basin' or pelvis; or the head being in the 'basin' or pelvic cavity, and now almost free of the womb, that organ may cease to act with effect, and the muscles of the belly and the vagina may not contract strongly enough to complete the expulsion of the child in time for it to inspire fresh air: for attempts at breathing will be made by the child if the after-birth is detached, as it may have been by the previous contractions of the womb. The child then may be still-born, although the labour, as far as regards the mother, has progressed favourably.

The midwife will, therefore, be prepared in all cases of breech presentation to find the child apparently dead. If the face is pale and the cord hardly beats, or if signs of congestion are present, she must act as directed, § 182.

The Knees, Feet, one or both, or a Foot and a Knee may present.

194. The labour is likely to be still more tedious during the *second* stage, and there is much more risk of the membranes being ruptured too soon than in breech presentations. The soft parts are not so well dilated, and there will probably, therefore, be delay in the delivery of the chest and head of the child, endangering its life.

It is of great importance to make out the presentation before the membranes rupture. If the mouth of the womb is not open, the posture of the child can sometimes be determined by external examination.

195. When the neck of the womb dilates, if a knee present, a small, somewhat round, projection, with a flattened surface, will be felt. If both knees present, there will be no difficulty in recognising them, but a single rounded projection may be mistaken for an elbow.

If the *elbow* present, it is a case of *cross-birth*, evidence of which may perhaps be also afforded by *external* examination. The accoucheur must be sent for immediately, and before 'the waters' break.

The *knee* is known from the elbow by the surface being flat, or even somewhat hollow, with an elevation on each side, while the *elbow* is pointed.

If a *foot* present, it must be carefully distinguished from a '*hand*' *before* the membranes break. The marks of difference between the *foot* and *hand* are, the toes are much shorter than the fingers, and cannot be bent up together; the great toe is of the same length as the other toes, while the thumb is much shorter: the great toe is close to and feels like the other four toes: the thumb is separate from and feels different to the fingers: the foot is long and set at an angle to the leg, with a projecting heel, and the ancle bones are well marked on each side; the hand is continuous with the arm, and the wrist has no projections like the ancles and heel.

196. In *knee* or *foot* presentations, the same conduct must be observed as in a breech presentation. No attempt must be made to hasten the first part of the delivery; the slower it proceeds the better, as the parts of the mother will be the better dilated.

197. If *a hand* present, with a knee or foot, the accoucheur must be sent for. In any case no attempt is to be made to pull down the presenting part, for if the hand should be brought down one of the most unfavourable positions possible will be produced.

If then *a hand* be found at the mouth of the womb before the waters break, it will be right to send for the accoucheur at once, and not wait till difficulty and danger to both mother and child be more manifest.

Cross-birth—Presentation of an Upper Extremity or of the Trunk. (Fig. 27.)

198. The midwife is only so far concerned with these postures of the child as to be able to recognise them, or at least to perceive that the presentation is beyond her province to deal with, and requires the aid of the accoucheur.

It has been seen that the child may present any part of its body. When it lies transversely, with the head or shoulders at one haunch (*ilium*) of the mother, and the breech towards the opposite one, it cannot be born without changing its position, and this change always requires the aid of the accoucheur.

It is true that *spontaneous evolution* may effect the delivery, but this result is so rare that the accoucheur does not in general trust to Nature's unaided powers.

If then the midwife, on examining internally before the waters have broken, cannot feel any part of the child presenting, she must make a very careful *external* examination, and she may perhaps be able to make out the posture. If she cannot feel any part of the child, but finds the womb broader than it is long, she must not infer at once that there

is a *cross-birth*, for this shape may be due to the presence of twins, §§ 54, 202, or to unequal development of the womb, &c.; but an unnatural shape of the womb felt externally, conjoined with an unusual position of the mouth of the womb, which will be found elevated almost out of reach, and the difficulty of feeling any portion of the child through the 'passage' or vagina, will be sufficient reason for calling in the accoucheur. If this is not done, the midwife will take upon herself an undue responsibility, and may be guilty of the death of both mother and child.

A majority of the cases of *cross-birth* occur in women who have 'the basin' (*pelvis*) contracted or deformed; the midwife will therefore specially examine the diameters of the 'basin' (*pelvis*), § 29, if she cannot recognise 'the presentation,' and send as early as possible for aid should it be required.

199. If there be a *cross-birth*, the womb, as it contracts, generally forces down a *shoulder*, which is recognised by its shape; that of a small round projection, attached to which can be traced the collar-bone and shoulder-blade, and in the opposite direction the arm; beneath the shoulder the ribs can be felt, thus distinguishing a shoulder from a buttock.

If the elbow, arm, or hand be met with, they must be distinguished from the knee, leg, or foot, § 195.

200. The *back* and *belly* never present after 'the waters' have passed away, except the child be dead.

201. Whenever the midwife finds that the waters have passed, and is unable to make out 'the presentation,' she should send for the accoucheur at once. Every hour of delay tends to imperil the mother.

Non-delivery, which may be the result of unaided efforts, will be fatal to the health, if not the life, of the mother.

The operation of 'turning' the child, § 92, dangerous at all times to the mother, and often fatal to the infant, is rendered the more difficult in proportion to the firmness with which the womb contracts round the child. If, then, the operation is performed before the waters have escaped a

favourable result may be hoped for, but an unfavourable result is to be dreaded according to the length of time that has elapsed since the escape of 'the waters.'

While waiting the arrival of the accoucheur the midwife must keep her patient perfectly quiet, give small quantities of strong beef tea at intervals, and iced water if there is thirst; and see that the bladder is not too full; but no enema, § 152, should be thrown up into the bowel before the accoucheur comes, as it would be likely to induce labour-pains. The midwife must be careful not to alarm the patient, but tell her that there is some obstacle to natural delivery which the accoucheur will be able to relieve. She should inform the friends that the child will probably be still-born.

CHAPTER VII.

PLURAL BIRTHS.

202. THE only certain sign of twins before labour, is the hearing two fetal hearts, § 52.

After the birth of a child the midwife places her hand on the belly to feel the womb. If it still contains one or more children, it will continue distended above the navel. On examining internally, the second bag of membranes will be felt; or if there has been only one 'bag,' a very rare case, some portion of the second child will present.

The midwife should encourage the mother by telling her that the second delivery will, if natural, be less painful and tedious than what she has just gone through.

She must tie the navel-string, § 142, with *two* threads or ligatures and divide it, but make no attempt to disturb its after-birth, which will come away with that of the second child.

Usually the womb takes an interval of repose for some minutes.

If, after waiting half an hour, the womb does not begin again to contract, and the second child is presenting either head or breech, the midwife should rupture the membranes, § 134; but if the presentation is 'cross,' the accoucheur should be sent for before 'the waters' break, as 'turning,' § 92, may be necessary.

The after progress of the second labour, if ordinary, is usually much quicker than the first, because the womb can contract with more power on the single child, and also the soft parts have been freely dilated by the first birth.

The rule for removing the after-births is the same as in ordinary labour, § 144,—the two come away together; but special attention should be given to the contraction of the womb, which may be aided by hand-rubbing over the belly.

203. The great danger in a plural birth to the *child* is, that the womb may be sluggish, and in breech cases the second child is then likely to die, § 193. The great danger to the *mother* is from hæmorrhage after the labour (*post-partum*), which is much more liable to occur than at single births. The womb or uterus, exhausted by its excessive efforts, remains uncontracted, and the surface where the two after-births (*placentæ*) were attached is, of course, much more extensive than where there has been but one after-birth or placenta.

In twin labours, then, the midwife must always be prepared for post-partum hæmorrhage or 'flooding,' § 175. If her patient is much exhausted by the labour of the first child, she will act prudently in sending for the accoucheur at once.

204. The management of cases where *three* or *more* children are born (triplets) is of the same kind as where there are twins.

As these cases are more exhausting than ordinary single labour, the woman will probably require a little brandy and water, but this must be administered cautiously, and only as required by the patient, and not measured by the solicita-

tions of the friends. Strong beef tea, in small quantities at a time, should be given as often as the patient can take it.

As a rule the patient will require more rest and longer tending after a plural than a single birth; and will be more liable to suffer afterwards from the evils consequent on 'getting up' too soon, if she is allowed to do so before the womb and other parts have recovered their proper tone.

CHAPTER VIII.

OBSTRUCTED LABOUR.

205. LABOUR is said to be 'obstructed' when the head or body of the child is hindered in its passage through the 'basin' (*pelvis*) by some disproportion between them.

The 'basin' (*pelvis*) being well shaped, the head of the child may be unusually large, or the bones of the head may be unusually developed, and the fontanelles so diminished in size, or even already become solid, that the bones will not ride over each other as in ordinary labour they do when passing through the brim, § 135.

The brain may be diseased and the head distended with fluid (chronic hydrocephalus). In such a case the bones are separated widely from each other, and the head feels something like the 'bag of waters' when tense, but it is high up and will not enter the basin (*pelvis*). If, however, the child is dead before the labour commences, the head sometimes becomes flaccid, and is forced through the brim. Sometimes the pains are strong enough to cause the head to burst, and it then passes. It not unfrequently happens that children with these heads (water on the brain) present by the breech, and the body passes, but the head remains above the brim of the 'basin' (*pelvis*).

206. It is very seldom that the midwife can recognise the cause of the obstruction in the above cases, and she must therefore follow the rule already laid down that, when the progress of the birth is hindered in the second stage, from

any cause whatever, she must keep the patient as quiet as possible, forbid all attempts at 'bearing down,' and call in the aid of the accoucheur. If the pains are powerful and the head does not advance, the womb may rupture, § 164.

207. When the *shoulders* of the child are very broad, they sometimes delay in making the turn. They can only pass, when one shoulder comes under the pubic or share-bone arch; if then the midwife finds them lying across, she must try and assist them in making their turn by, if possible, hooking her finger into the arm-pit, or, with great gentleness, carrying the head backwards towards the perineum, when the shoulders will usually make their turn and pass out. The midwife must be careful not to twist the neck or drag upon the head. The perineum in these cases requires very careful management.

208. The body of the child may be enlarged by disease as dropsy, or by deformity or monstrosity.

The accoucheur must be sent for as soon as the fact of the obstruction is known, whether the cause be exactly determined or not.

The delay caused by wrong presentation of the head (face, brow, &c.) has been already treated of, §§ 187, 188.

209. The dimensions of a well-shaped 'basin' or pelvis, as given, § 32, are assumed to be the standard measurements; small variations will not prejudice childbirth, but the ordinary progress of labour may be interfered with if there is a considerable departure from those dimensions.

The Basin or Pelvis may be too large.

210. This form, though not obstructive to labour, may be a source of danger to mother and child.

During the pregnancy, the womb, instead of rising out of the hollow of the basin or cavity of the pelvis about the middle or end of the third month, § 46, is apt to remain, and, as it increases in weight, to press upon the surrounding parts and cause much discomfort, and it will have a tendency to fall

down, § 65, or to retrovert, § 64. When labour comes on, the child may be expelled into the world before the mother is prepared; if she is standing the child may fall on the ground and be injured, or may imperil the mother by dragging on the navel-string, and hæmorrhage or inversion of the womb, § 176, may be the result. Delivery has occurred while the mother has been seated on the closet; also during sleep, and the newly-born has been found smothered. The perineum is apt to be damaged by the child being forced upon it before the softening and dilatation, usual in ordinary labour, has taken place. The sudden emptying of the womb is not unfrequently followed by hæmorrhage, or by serious fainting, § 98.

The same train of events during labour may occur when the pelvis is of ordinary size, but the child is excessively small.

In ordinary labour, the child is rarely born under seven or eight hours after the first pain; if the midwife has reason to believe that the present labour is likely to be too quick, she must keep her patient in bed as quiet as possible, forbid all movement, and particularly 'bearing down'; and she will take these precautions if she learns that former labours have been very rapid and painless, and observes that the pelvis is of more than ordinary size. When this is the case, the hips are sometimes very broad, and the woman waddles in her walk.

The Basin or Pelvis may be too small.

211. The basin or pelvis may be contracted in all its dimensions, the 'too small' pelvis; or, in one or more, the 'deformed' pelvis. The 'too small' basin or pelvis is met with in women of ordinary stature and health, and cannot be recognised until labour demonstrates the disproportion between the child and the 'basin' (*pelvis*). Of course, an excessively large child will find an ordinary sized 'basin' or pelvis too small. This excessive growth of the child has been found when the pregnancy has been prolonged for some days beyond the ordinary term.

Deformed Basin or Pelvis.

212. The 'basin' or pelvis may be of ordinary size at the brim, but contracted at the outlet—the 'funnel shaped' pelvis.

Labour here goes on favourably at the beginning, but when the head has descended into the hollow of the basin or cavity of the pelvis it is stayed there; generally it fails to make the 'turn,' § 136, and after a time the symptoms of *powerless labour*, § 213, set in.

The most common deformity of the basin or pelvis is that of contraction in the sacro-pubic (antero-posterior, conjugate) diameter, § 32; it is usually the result of 'rickets' in early life (Figs. 34 and 35).

The 'basin' or pelvis may be contracted in its 'transverse' diameter; this is commonly due to original fault in development, sometimes is the result of disease in adult life—softening of the bones, osteo-malakia—Fig. 36.

One of the sides of the 'basin' or pelvis may be deformed either by disease, injury, or vicious development, Fig. 37.

The 'basin' or pelvis may be deformed from fracture or displacement of the lumbar vertebra, Fig. 38, or as the result of softening of the bones, Fig. 39, or by a tumour growing from the bone, Fig. 40.

FIG. 34.—Contraction of the brim of the pelvis.
(After Ramsbotham.)

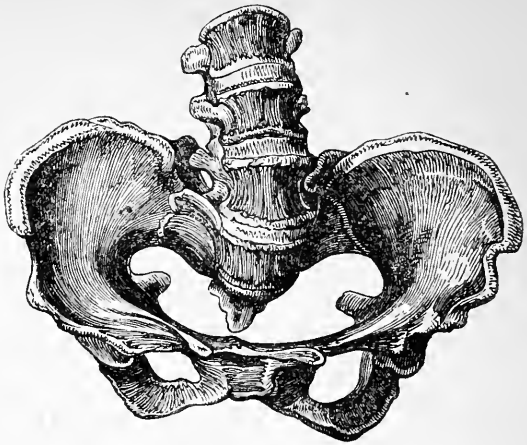


FIG. 35.—Ovate pelvis. (After Ramsbotham.)

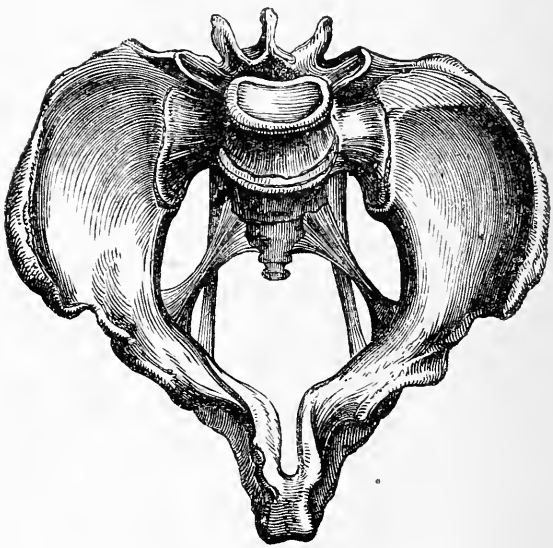


FIG. 36.—Oblong beaked pelvis. (After Churchill.

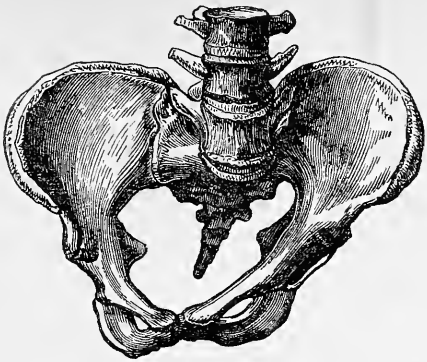


FIG. 37.—Oblique ovate pelvis. (After Naegele.)

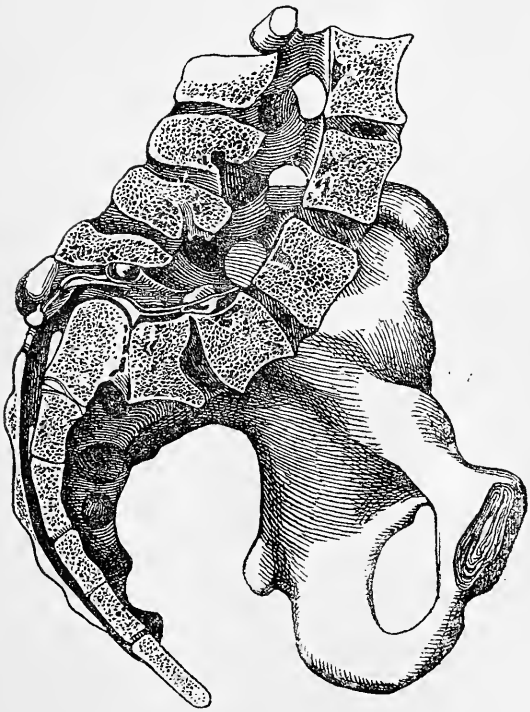


FIG. 38.—Deformity from injury to spine.

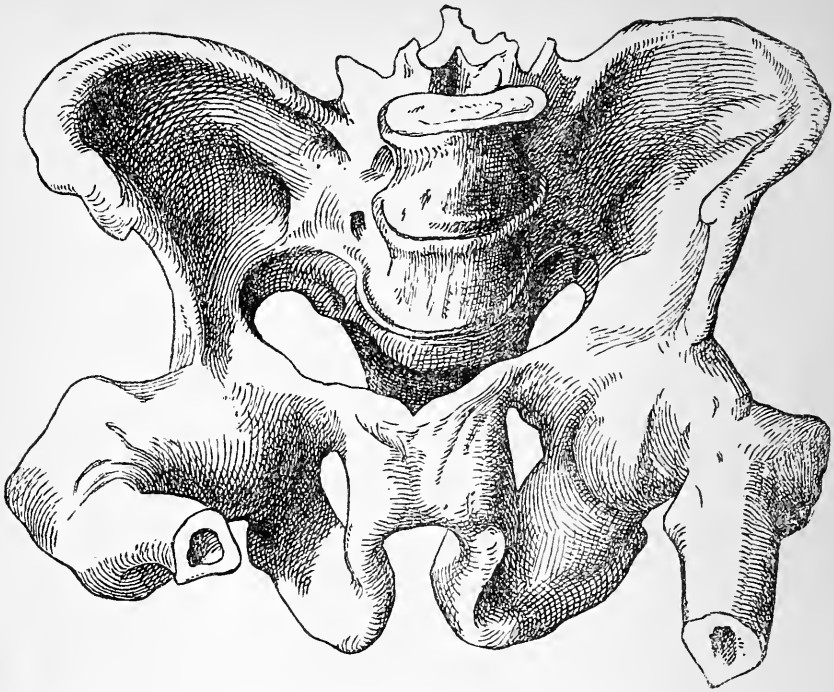


FIG. 39.—Softening of the bones (osteo-malakia).

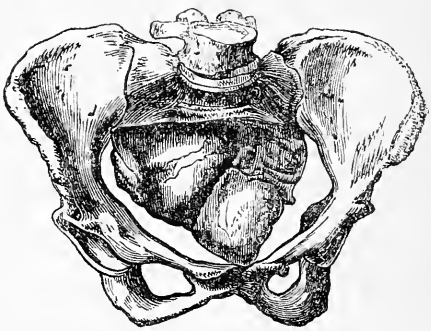


FIG. 40.—Bony tumour of the sacrum.

The space in the 'basin' or pelvis may be diminished by the presence of a tumour growing from the soft parts, or by a stone in the bladder, or by an over-full bladder, or even by fæcal accumulation in the bowel. The deformities of the

'basin' or pelvis can only be discerned by internal examination, though the history of former labours may direct attention to the subject.

So soon as the midwife perceives that the head does not progress, although the pains are such as would ordinarily be sufficient, or if the pains cease after the second stage of labour has begun, she must call in assistance.

213. Powerless Labour.—When the head is arrested in its onward course the scalp begins to swell, and, as the bones overlap, the head becomes elongated; this condition must not be mistaken for real advance. If the obstacle is greater than the uterine contractions can overcome, the symptoms of *powerless labour* come on. The pains after a time begin to diminish in force and frequency. The pulse becomes quicker, cold shivers and vomiting occur, the tongue is dry and furred, the skin burning, the woman becomes restless and throws her arms about, the vagina or 'front passage' becomes hot and dry, or a brownish discharge which is often offensive takes the place of the soft moisture proper to the parts. If the patient is unrelieved, bad becomes worse; the vomiting, from being bilious, becomes like coffee-grounds, the belly tender, the pulse more rapid and very feeble; a cold sweat bedews the limbs, the patient falls into a stupor, with low muttering delirium, and death ends the scene.

The midwife must understand that there is no fixed time for such a train of symptoms to come on, and while delay during the first stage of labour is borne without injury, it may speedily become perilous in the second stage.

The midwife must on no account give 'ergot' if there is the least suspicion of *obstructed* labour; in fact, the only time when this drug is allowable in her hands is when she fears hæmorrhage after the labour is concluded, and cannot get speedy assistance. See p. 85, note and § 175.

214. But even when there is no actual risk to life from *obstructed* labour, there is great danger of injury to the soft

parts when the head is delayed. Its pressure causes the parts to swell, and perhaps to inflame and to slough, and thus *fistulæ* or openings from the vagina into the bladder or into the rectum are formed; the former are the more frequent. The urine then escapes by the 'front passage' or vagina instead of the urethra, without control, and the woman must undergo an operation to remedy the mischief caused by a delay that the midwife is responsible for, if she has not called for aid. This last kind of labour is by some called 'lingering' or *tedious* labour. It may occur from simple want of power in the womb to expel the child, though both the 'basin' (*pelvis*) and the child are natural and not disproportionate, or the disproportion is slight, not amounting to deformity in either head or pelvis.

Here the use of the 'forceps' by the accoucheur saves serious injury to the mother, for the damage to the vagina by sloughing is almost always due to the pressure of the head and not to the 'instruments.' The midwife must understand that the sooner the 'forceps' can be applied, the less risk there is for both mother and child.

PART IV.

CHAPTER I.

MANAGEMENT OF THE LYING-IN AFTER DELIVERY.

215. The room must be kept clean; no slops nor foul linen should be allowed to accumulate. Fresh air, with a careful avoidance of draught, is essential for the health of mother and child. The window should be shaded at first, but afterwards the sunlight, provided the patient is not blinded with the direct rays, aids much in cheering and hastening recovery.

The temperature of the room should be kept at about 60° of warmth; a small fire even in warm weather will maintain a very desirable ventilation. Perfect quiet is an absolute necessity. None but the husband and one female should be admitted into the room for the first twelve hours at least, and then only for short periods. Gossips fatigue the patient and crowd the room. Especial care should also be taken to let no one approach the lying-in woman from whom she may have any chance of catching infectious disease, such as scarlatina or small-pox. For the first week the patient should keep the recumbent posture, and not get up even to have her bed made. Each day she can be shifted to one side of the bed while the part she quits is being shaken up.

Every day she must be carefully washed with a flannel

and warm soap and water. After the first twenty-four hours the night-dress should be changed every night and morning.

On the ninth day, if progress has been favourable, she may get up for a short time, and lie either on a couch or outside the bed, and so gradually take to her usual habits.

As to the *diet*, it must be regulated a good deal by the feelings of the patient. If there is appetite for it, good soup or beef tea should be given on the first day; there is no advantage, but the contrary, in keeping a woman who has had a 'good' time on slops only, as gruel and tea. If there is a decided disinclination to meat, there will often be some evidence of illness requiring careful watching. The second day a mutton chop, and so on, may be given, but at the same time over-feeding is to be guarded against. As a rule beer and wine are better delayed until the patient gets up.

Thirst can be relieved by pleasant drinks, as thin barley-water flavoured with lemon and not too sweet, apple-water, toast-water, cold water, imperial, milk and soda-water, whey, buttermilk.

216. The midwife must watch that the *privates* (*vulva*) of the mother and the *womb* recover their natural state as before conception, and see that the *breasts* and their secretion, the *milk*, are in proper order for suckling the infant.

Immediately after the labour the patient feels exhausted and 'worn out;' she often experiences a slight shiver followed by a feeling of warmth, and then a desire for sleep, and perspiration breaks out over the body. After the sleep she wakes refreshed and strong, and the midwife should examine the *pulse*.

217. *The state of the pulse* is often indicative of impending danger, and should, therefore, be constantly under observation, both during and after labour. During the latter part of the second stage it is rapid, perhaps 120 beats, and on

its conclusion falls below the ordinary rate, perhaps to 60; after an interval it rises, and after some twelve hours subsides again, to continue at its ordinary rate except just as the milk appears when it is quickened.

But if after delivery the pulse, instead of sinking, remains full and rapid, *hæmorrhage* may be apprehended. If, on the contrary, it does not recover its tone, serious *collapse* may be at hand. If, then, the midwife finds the pulse vary from its usual course, she must prepare herself for some complication, and be ready to call in assistance if necessary.

218. When all goes well with the mother her skin becomes soft, and is often bedewed with perspiration during the first week. If she lies in too warm a bed an eruption of small pimples (vesicles), like drops of perspiration oozing out beneath the skin, is apt to appear, accompanied with a distressing prickly sensation. This condition, called *miliary fever*, is of no great importance, and is relieved by diminishing the cause. The exposure to cold by draughts, damp, or insufficient clothing, must be guarded against.

219. *The Urine.*—In about four to six hours after the labour, or when the patient wakes, she may try and pass water. If she feels refreshed and strengthened by her repose, she can pass the urine by turning over on to her hands and knees. This position will favour the expulsion of clots from the vagina, but if there is any faintness she must on no account rise up, but the water must be passed while she lies on her back into a bed-pan, the edge of which may be covered with a napkin, placed beneath her. If there is any pain or soreness about the parts, a warm fomentation of camomile flowers, or a poultice, or a sponge dipped in warm water and wrung out, will often give great relief and encourage the passing the water. If these remedies are not sufficient the catheter should be used, § 153. Distension of the bladder with urine, besides other mischief, hinders the proper decrease in the uterus.

Retention of urine may occur although the patient has passed some soon after delivery. Each day the midwife should enquire as to the amount passed: it is not enough that the woman herself, or the nurse, says that the water has been passed, the quantity should be seen. It may happen that a little has been dribbling away from an overfull bladder which has not been properly emptied, and its distension will give rise to discomfort and symptoms that may be mistaken for inflammation about the womb, &c. If the bladder is full, it presents a soft round supple swelling or tumour, rising above the share-bone or pubes, and concealing the womb. Retention of urine occasionally continues for days or even weeks, requiring the use of a catheter at least twice a day.

But the urine may not be secreted at all by the kidneys, and so, though no water is passed, the bladder remains empty. This is a most formidable symptom, and if it persists death always follows. It is called *suppression of urine.* The accoucheur must be called, as he ought to be in cases of simple 'retention.'

220. The *bowels* do not usually act until some thirty-six to forty-eight hours after delivery, but if they are not moved by this time a tablespoonful of castor oil, or a black draught (senna, ginger, and salts), should be given, and repeated in six hours' time if necessary. Discomfort and uneasy pains are often relieved by free action. If the bowels are neglected symptoms of fever with headache, loss of sleep, pain over the womb may come on, and the milk is apt to disagree with the infant.

If the bowels do not act with the castor oil or draught an enema of soap and water should be administered, and if this is ineffectual medical aid must be summoned.

221. *The Privates.*—The external genitals or pudenda, and the perineum, which just after labour are very tender and somewhat swollen, ordinarily recover their natural condition in about twenty-four hours. The mucous membrane at the

fourchette or lower edge of the vulva or 'privates' is often torn in first labours; even the substance of the perineum may be slightly torn; but if the wound is slight and great cleanliness is observed, healing takes place in a few days.

The vagina or 'front passage' speedily contracts, though it seldom returns to the same narrowness and tenseness that it previously possessed.

222. The *womb* just after delivery is felt above the pubes or share-bone as a large swelling or tumour, and thenceforth gradually diminishes in size. In those who have had several children, and especially if they are thin persons, the womb can readily be felt about two fingers' breadth above the share-bone or pubes until the end of the second week; by the end of the sixth week it is reduced nearly to its stationary condition, and by the end of three months has regained its original situation, consistency, and mobility, though it still remains somewhat enlarged. In some women the change in the womb does not proceed so rapidly or regularly. When the contractions or 'pains' have been weak, the womb sometimes remains as high as the navel for some four or five days. Sometimes after having diminished in size, it re-enlarges for some hours, and again decreases. This condition is usually accompanied by more or less severe pain and discomfort. Hot fomentations to the belly are often followed by a discharge of clots with instant relief.

Those who have suffered from 'falling of the womb' should keep their bed or couch for at least a month until the parts have fully recovered; and they will thus avoid a return of the displacement of the womb.

223. *After pains* are, like 'labour pains,' caused by the womb contracting. They are more intense and more frequent with those who have previously borne children than after a first labour. They usually commence soon after the delivery, and cease in thirty or forty hours. On each occasion an increased quantity of fluid is usually squeezed

from the womb, and frequently one or more clots. In some women they cause so much distress as to require medical treatment; if, then, a warm enema and fomentations to the belly, and a dose of ginger-tea, are insufficient to give relief, medical advice must be sought.

224. The *lochia* (the *cleansings*, the *discharge*) are for some twelve or fifteen hours nearly pure blood; they then become more watery for some three to five days, and gradually pass into a greenish dirty water, the 'green waters,' ceasing at about the end of three weeks or a month. During their flow a peculiar odour is very perceptible. The discharge varies much in different women, both in quantity and quality; sometimes it ceases in a few hours after delivery without any ill effects resulting, and this is more commonly the case when ergot has been administered, or if there has been much difficulty in the labour, accompanied with irritation of the womb; but if, after having been plentiful, they cease suddenly, it is frequently a symptom of mischief, and the midwife must make a careful examination of the pulse and general system, and if she finds any unfavourable signs, send for the accoucheur.

The quantity for the first twenty-four hours is usually sufficient to soil ten to twelve napkins, on the second day eight, on the third day six, on the fifth day four, and on the succeeding days two.

A return of almost pure blood is not unfrequent on the patient getting up after the nine days' rest; should such occur she must again keep the horizontal position for three days.

If in spite of proper precautions, and still more so if from their neglect, the bloody discharge continues for two or three weeks after labour, the cause will be some inflammation, or at least irritation, about the womb or the adjoining parts which, if not attended to, will probably develope into serious mischief. General debility will also tend to keep up an abundant and persistent flow.

If the discharge becomes acrid and irritates the parts it touches, an injection of a pint of warm water with a tea-spoonful of Condy's Red Fluid, § 154, should be used three or four times a day.

Cleanliness is of the utmost importance. Whenever the napkins are changed the parts must be sponged with warm water, and if there is any clotting in the vagina the syringe must be used with warm water and a little of Condy's Fluid. The napkins must be warmed before application. No supposed remedies are to be given either to check or encourage the flow, as they are quite useless. If there is any mischief going on, medical aid must be sought.

Suckling.

225. The BREASTS which soon after the beginning of pregnancy have begun to enlarge, at the end of the pregnancy usually become swollen, and in those who have already borne children often fill with milk. In those who are mothers for the first time the milk does not generally appear until thirty-six to forty-eight hours after delivery and even later.

The first milk is a watery viscid fluid with yellow streaks in it: it is called *colostrum*, and is supposed to act as a purgative to the infant. After twenty-four hours, or later, the milk becomes whiter, opaque, and has a sugary pleasant taste. When the 'draught' comes on—that is, when the blood rushes to the breast to be converted into milk—the breasts swell and become hard, aching pains shoot through them, the skin shines, and broad blue veins are seen creeping over its surface; the nipples also become engorged and erect. There is often some general disturbance of the system. The pulse is quickened, slight chills followed by heat of skin occur, the sleep is disturbed. The swelling of the breasts may become highly painful, and extend even to the armpits. Such pain should be relieved by warm fomentations. Milk oozes on slight pressure from the

nipple. The mother must bear the pain caused at first by the infant sucking, and will soon feel comfortable as the milk is freely drawn off.

The symptoms may become so greatly aggravated as to call for special treatment.

226. If the breasts are full the sooner the child is put to them the better, but if they are flat and limp the child should be applied once during the first day after labour, and again about every six hours after, until the milk comes more freely, when the infant will suck about every two to three hours. If the child is applied too frequently at first the nipples are apt to become irritated and sore.

If the breasts are sluggish they should be wrapt in a thin layer of cotton wool, and this may be covered for an hour before the child is to suck, with a piece of oiled silk. The moist heat will stimulate the flow of blood, and encourage the formation of milk.

Each time the child is about to suck the nipple ought to be cleansed with a soft rag and plain water, and again when the child leaves off sucking. Of course the nipple and breasts should be washed with warm soap and water every morning and evening. By such care the chance of sore nipples, and consequent 'bad breast,' will be avoided.

During the first week the mother should give suck while lying down. She can turn to one side, and supporting herself on her elbow, let the nipple fall into the mouth of her infant. Both breasts should be equally used.

When the breast is very fat and the nipple short, § 71, it sometimes happens that the child buries its face so as to stop its power of breathing through the nostrils, it consequently drops the nipple frequently to gasp for breath. If no notice is taken the child gets starved, and the breasts become overloaded, and perhaps inflamed, or the milk runs away when the child ceases its futile attempts.

The application of a breast-pump, see § 259, to draw out

the nipple, and the use of a glass, metallic, or indian-rubber teat, according to circumstances, will generally get over the difficulty, aided of course by a little management of the breast by the mother; or she may put an older child to the breast for a few times until the teat or nipple becomes well formed, or a friend may do her this service. Sucking performed by a stronger mouth than the infant's will often put all to rights, drawing out the nipple, and causing the milk to flow freely.

During the time the milk is flowing naturally, that is, for eight or ten months, the 'courses' are usually absent, but it sometimes happens that the 'period' returns after two or three months. Whether this be the case or no, suckling does not prevent pregnancy. It should not be prolonged beyond eight or ten months, except under medical advice, since the milk becomes inferior and unfit for nourishing an infant of that age, and the drain exhausts the mother.

227. The quantity and quality of the milk varies much at different times in the same woman, and is much influenced by her state of health.

A temporary *cessation* of the milk-flow is frequently induced by mental emotion, or some slight indisposition; rest for a few days, the baby being hand-fed meanwhile, will be sufficient to restore the natural source of nourishment to a healthy state.

A mother should be particularly careful not to give her child suck just after she has suffered from any access of temper, or when elevated or depressed by mental emotions. Well-authenticated cases are on record where convulsions and even death have occurred to the child sucking under such conditions; the milk evidently being rendered poisonous.

Some women suffer from a *profuse* and continuous *flow* of milk, which runs away even when they are not suckling. The breasts should be well sponged with cold water two or three times a day, kept cool, and well supported by a

bandage. If these means are insufficient, medical advice will be required, as the mother's health will suffer from the great loss, and the child will also suffer, as the milk soon deteriorates in quality.

The opposite condition is also found—*absence* of milk without any ill health on the part of the mother. The breast appears not to have reached its full growth or development. On examination it is found soft and flaccid, even after long intervals of rest. The 'draught' never comes on. The infant is always hungry, and soon learns to reject the useless bosom, and takes to the 'bottle' eagerly. Under these conditions the child must either have a wet-nurse or be hand-fed. No milk-powders or any remedies—quack or other—will excite a flow of milk, but injury to the general health may be easily inflicted. Of course, whenever the milk is deficient in either quantity or quality, medical advice should be obtained, as judicious treatment will be required for both mother and child.

228. When the mother resumes her usual dress she must take care that the corset is so arranged as to prevent pressure upon and give support to the breasts. She must always remember that her milk will be affected by any indiscretion, either in food or habits, and that unless her health is maintained by wholesome diet and pursuits, her infant will infallibly suffer.

229. The *getting-up*.—Upon the ninth day, if all has gone well, the mother may make her first attempt to leave the lying-in-bed. She should walk a little about the room, and then lie down again, but not sit, for the sitting posture is very unfavourable to the reduction in size of the womb, and favours prolapse or falling of the womb; for the same reason going up stairs, lifting any weight from the ground, as the infant or a jug of water, are prejudicial.

In summer time, when the air is warm and the weather fine, it is very desirable that she should go out into the open air as soon as possible, say on the fourteenth day, but only

for a short time, so as not to cause fatigue. When the weather is forbidding, as at other times of the year, she must keep her warm room for some time longer.

Whenever she leaves her room, she should be well wrapt up with a shawl or the like, and avoid any risk of exposure to cold or wet until she has quite regained her ordinary strength.

It is no doubt true that these precautions are not always observed, and women escape illness apparently without suffering from their rashness, but it is the duty of the midwife to guard, as far as she can, from the possibility of mischief, and to give sound advice whether it is followed or not; she will thus free herself from blame if, in spite of warning, her patient incurs danger.

CHAPTER II.

THE INFANT.

230. THE new-born child, if healthy, after being washed and dressed, usually passes some urine, and goes to sleep. No nastiness, like butter and sugar or the like, should be put into its mouth. It must be laid in its own bed. The crib or cradle should be elevated some feet above the floor, otherwise the infant will be exposed to cold from draughts. If there is no crib or cradle, the infant should be laid on a pillow and placed at the foot of the bed. It should never be allowed to sleep close to the mother, or on her arm, especially at the time when she is asleep. Every year a great number of children are suffocated by being overlaid. A healthy child requires no additional heat to that kept up by proper clothing. A rocking cradle is not only perfectly unnecessary, but becomes a great source of trouble, as an infant accustomed to its use will not go to sleep without being rocked.

231. After some two, four, six hours, or even later, the infant wakes and begins to cry. This is the time to put it to the mother's breast. The nipple, moistened with a little milk or

saliva, should be placed in the infant's mouth, which, on receiving a few drops of milk squeezed into it, will seize on the nipple and suck. The first milk obtained is the colostrum, § 225, which acts as an aperient. Soon afterwards the bowels act, and discharge a dark-green tenacious mass, called *meconium*, which has collected during the infant's life in its mother's womb. This is removed in from two to four days, and the motions then become of a golden or brimstone colour, of a pap-like consistence, and are passed from two to four times in the twenty-four hours.

If there is no milk, the babe should be soothed to sleep again, and a fresh attempt made at the breasts when it again cries for food.

It has been seen, § 225, that the true milk frequently does not appear for some time; some colostrum, however, is almost always yielded for from twenty-four to thirty-six hours; there is no fear that the child, if healthy, will be starved, for it has been well nourished up to the moment of separation from the mother; if, nevertheless, it appears to be very craving, some sweetened toast-water may be given, but no food, as cow's milk, and still less gruel or pap, is to be offered, until repeated applications to the breast have made it evident that the mother cannot suckle, or the infant looks weakly, and shows by its constant wailing that it requires immediate nourishment.

232. No fixed rule can be laid down as to the times at which all infants should be fed. 'It is perfectly natural that the mother should take the child to the breast at the earliest possible period after its birth, and it must be again fed when it is hungry; it may want the breast again in two hours, or it may not want it again in six hours.' An infant's stomach will probably hold about two or three ounces of fluid, but many take more. Infants have the power of throwing off the stomach or vomiting any superabundant quantity of milk they have swallowed. This 'possetting' is not an unhealthy operation, but should be controlled by taking the child away

from the breast before it has sucked too long. Infants often pass by the bowels a large quantity of fluid which is the whey of the milk. This is not diarrhœa, and does not require physic.

The healthy child commonly requires feeding every two to three hours during the day, and about twice or thrice, say at 11 P.M. and 5 A.M., in the night time. By watching the child when sucking, the action of the throat will show whether it is swallowing or not; the milk, too, can be heard gurgling down its gullet. An infant is apt to fall asleep in the middle of its meal, but it should be awakened and induced to suck again until it has taken a proper quantity; directly it has finished, it should be removed to its own bed. The habit of sleeping with the teat or anything else in the mouth becomes very troublesome, and even injurious, and should not be allowed.

233. *Artificial feeding.*—When the infant cannot be fed at the breast, it is necessary to find a substitute for its natural food. The only one that can be used is the milk of the cow, ass, or goat.

The milk of the cow is that which is chiefly depended upon by those who are unable to afford a wet-nurse. Cow's milk differs from human milk chiefly in its lack of butter and superabundance of casein—the substance which forms the scum on boiled milk.—The best way to use cow's milk is to let the fresh milk stand for three to four hours in a tall ale-glass, and then to dip out with a spoon the top third portion for baby's use, rejecting the remaining two-thirds. One table-spoonful of this top milk must be added to two table-spoonfuls of warm water, together with a small tea-spoonful of loaf sugar, or, what is better, sugar of milk, to be bought of any chemist. Of this mixture an infant ordinarily requires a quart in twenty-four hours, but the quantity, of course, varies.

The milk should be given by means of a bottle, so that the child sucks, for the act of sucking causes the saliva to

mix with the food, a requisite for healthy digestion, especially when after a little time biscuit and other farinaceous food are added to the milk.

The best bottle is the old-fashioned flat bottle, with a short teat. Those bottles that require the use of a piece of indian-rubber tube are very apt to become foul. The least atom of dried milk sticking to the tube, or other part of the bottle, will turn sour any fresh milk that touches it, and thus cause diarrhœa or vomiting. Moreover, the first bottle cannot be left in the cradle with the infant—a great advantage—for there is no readier way of 'turning' the milk than to expose it to the heat of the bed and contact with the baby's mouth. The bottle should be scalded out every time, both before and after use, and no milk or food should be left in it after the meal is finished. It is a good plan to rinse the bottle out in a pint of water to which a small teaspoonful of Condy's disinfecting fluid, § 154 (8), has been added. The indian-rubber teat, and still more the tube when it is used, should be renewed frequently, and, when not in use, laid in a very weak solution of Condy's fluid.

It is a good thing for the hand-fed infant if it can get the breast once or twice a day, provided the mother is not injured by suckling; and if her condition is so debilitated as to render her unable to suckle her child, she, undoubtedly, requires medical advice.

234. If the infant does not *thrive* the cause will, most probably, be the diet, and the milk must be carefully examined. It happens, sometimes, that the mother's milk, though apparently good, does not agree with the infant, and the same effect is also found with that of a wet-nurse, but an evil result is most frequent with cow's milk. If, after trying different dairies and different proportions of milk and water, the child wastes and becomes ill, it will require such kinds of food, medicine, and treatment as are beyond the province of the midwife to advise.

235. *Crying* is the mode in which the infant makes known

its wants. Observation will soon interpret the meaning of each cry.

Crying from hunger is recognised by considering the interval since the infant was fed. The cry is usually accompanied by active movements of the head and hands as though seeking for the breast, the mouth seizes eagerly the finger or any soft round body presented to it, and sucks at it repeatedly.

Crying from pain may be caused by a pin, or a tight string, or a hard fold rubbing against a sore place; but if it is accompanied by a distressed countenance, while the skin is hot and dry and the breathing rapid, and movement seems to aggravate the cause, and the child refuses the breast, no time should be lost in seeking medical aid.

A healthy child will rarely continue crying, unless from some physical suffering. It does happen, however, though rarely during the first month, that an infant seems to cry merely to exercise its lungs, but then it soon becomes hushed in sleep.

236. *Costiveness* sometimes affects the infant, and if the meconium, § 231, is not cleared out in due time, griping and uneasiness will come on. This pain must be remedied by a warm linseed-meal poultice, half an inch thick, laid all over the stomach, to be repeated every two hours till baby is easy, and a tea-spoonful of castor oil, with a drop of oil of aniseed or a little dill water, should be administered. Occasionally, from some quality of the milk, and more frequently when the infant is hand-fed than breast-fed, the bowels act only once a day. This action, if baby thrives, may be enough, but less will certainly be wrong, and then if the infant is fed from the breast, attention must be paid to the mother's habit of body, and she must take some aperient medicine, as an occasional dose of senna-tea; or a laxative diet may be sufficient, as figs, prunes, roasted apples, &c.; but if the child is not acted upon by these means, a few grains of sulphur, as much as will lie on a

sixpence, given for a few days in honeyed water, or a small dose of castor oil, repeated every second day for three times, will often be sufficient. Should these means fail, recourse must be had to medical advice, for the child will cease to thrive and actual illness will supervene on neglect.

Constipation may be due to a wrong formation of the bowel, the passage not being open. The midwife will notice that the child passes no motion, and that it is in pain. On examination she will find some difference from the usual condition of the anus, § 20. This state, if not relieved by the surgeon, will cause the death of the child.

237. *Diarrhœa* is the result of undigested food. If the dejections are more frequent than four times a day, are greenish, slimy like white of egg, and, perhaps, mixed with blood, and offensive, while the child is uneasy or even screams with pain, the belly becoming swollen and tender, the midwife or nurse must soothe the pain by a warm linseed-meal poultice, and endeavour to find out the cause of the illness. If the mother is in fault, that is, if her bowels are confined, a dose of castor oil, or black draught, may set all to rights, but if she is suffering from diarrhœa, she must seek medical aid, as she will require skilled treatment.

Meanwhile the baby must leave off sucking for twenty-four hours, and be fed with toast-water sweetened, to which may be added a little lime-water—two tea-spoonfuls to half a pint of the toast-water. Often the temporary removal from the breast will be sufficient, if done early enough, but if the baby looks ill and the diarrhœa continues, it will need skilled medical advice.

The same course must be pursued when the baby is brought up by hand.

238. *Vomiting* is frequently only the voluntary act of the infant relieving its overloaded stomach, and, if not too frequent, is of no consequence, but when it is caused by improper food, or, as very frequently happens to hand-fed infants, by the milk having turned sour, or being impure,

it is soon accompanied by colicy pains, and, perhaps, diarrhœa. Of course the cause must be removed, and a change of the milk, or a little lime-water, will relieve the irritation. If it is likely to prejudice the health, medical advice must be taken.

239. The *navel-string* soon begins to dry up, and in from four to seven days it resembles a piece of transparent horn. A crack forms around its root, which, day by day, becomes deeper, until separation is complete, and the piece drops off, leaving a small raw spot, which soon heals. The navel becomes indented, and at the end of the month the belly-band can be dispensed with, unless there is any tendency to pouting of the navel, in which case a compress or pad, made of a piece of cork, covered with a fold of lint, may be placed under the band, or the cork protected by lint may be fixed by two pieces of strapping-plaister put crossways. The cork must be large enough to cover the whole of the navel.

Sometimes the place where the navel-cord separates has a tendency to slough, and gives off a nasty smell. It must be bathed frequently with Condy's Red Fluid, § 154 (8), diluted—a tea-spoonful to a pint of water, and powdered with a little fuller's earth.

A more serious matter is bleeding when the cord falls off. If it does not stanch at once by pressure with a wad of lint, the accoucheur must be called in, as a slight loss of blood is very hazardous to an infant. The bleeding may be a symptom of serious mischief.

Protrusion of the bowel at the navel (rupture at the navel, *umbilical hernia*) is not infrequent, especially if the child cries much before the navel is properly set. The defect must be attended to without delay, and the surgeon must direct the proper remedy. So also with rupture, or protrusion of the bowel at the groin or into the 'purse' of the male child. A truss should be applied as soon as the rupture is discovered, for it will tend to increase if left alone. The surgeon will see that the truss fits accurately, and his

directions must be carefully followed. The part should be bathed with cold water, night and morning, and care taken, whenever the rupture appears, to lay the child down with its thighs bent upwards, and to press the bowel back into the belly, and readjust the truss, which may be covered with oiled silk to prevent its rotting by the urine.

240. *A soft swelling of the scalp*, called 'caput succedaneum,' is found when the head of the child has been subjected to considerable pressure during its progress through the mouth of the womb and along the 'front passage' or vagina. The swelling occurs at that part of the scalp which has advanced first, and has been unprotected by the bag of the waters, either because the waters have not collected in front of the head, and so formed a dilating wedge, or have run off on early rupture of the membranes. The size and shape depend on the pressure which the mouth of the womb and vagina have exercised on the scalp. The swelling if large may alarm the parents, but the midwife will understand that it is of no real consequence—that it is in no way connected with the brain, but is wholly outside the head, and that it will gradually subside if left quite alone, and that it requires no treatment. The midwife will observe that the skin is quite healthy and natural, that there is no pulsation or beating in the swelling, and that moderate pressure on it gives no uneasiness to the child. The subsidence is usually slow, and may extend over two or three weeks or longer. It first softens, then lessens in size, and finally disappears, the scalp becoming quite flat.

241. *Jaundice.*—Many infants when a few days old become tinged of a dull yellow colour, but the white of the eyes is not yellow nor does the urine stain the napkins. They are not suffering from real jaundice : there is no disturbance of the child's health, the bowels act, and the motions are of a natural colour. The staining of the skin will gradually die away without requiring any remedies ; but if the child loses its liveliness and becomes ill, if the motions are whitish or

clay coloured and offensive, if the white of the eye looks yellow, and the urine stains the napkins, medical advice should be sought. The jaundice may be due to some wrong formation of the liver, or it may be due to temporary causes which proper treatment will remove.

242. *Scalding*, *chafing*, or *spraying* of the skin will almost certainly follow want of cleanliness. If a wet napkin be suffered to remain on the infant—if the child is not properly dried after washing, the skin, especially at the folds and near the joints, will soon become red, sore, and crack, causing continual pain or irritation to the child, who will consequently be always wailing, and will lose health and strength. This state is also frequently brought on by a wrong diet.

After washing the infant the nurse should always powder it with the best rice-starch powder, not scented. If the skin in spite of care chaps, a much better application will be found in lycopodium or puff-ball powder sold by all chemists. Water will pass over any part of the skin dusted with this powder without wetting the skin.

243. *White Mouth—Thrush—Sore Mouth.*—The gums, lips, and tongue are sprinkled with little white flakes like curds of milk, which in a day or two fall off, and if the spot is not healed, leave a minute sore. The disease is a sure sign that its food is disagreeing with the infant. If the infant is at the breast the mother's health and especially the action of her bowels must be looked to, and set right if out of order. If the child is hand-fed the milk must be carefully examined, also the vessels in which it is placed. The *white mouth* is frequently found in infants who have been fed with some kind of farinaceous or flour food, as gruel or pap. The various sorts of this food are *all* unsuitable during the first two to three months or perhaps longer, though in the fourth month baby will be able to digest a certain amount of biscuit food. The only effective treatment if the child is hand-fed is to change the milk and perhaps the proportions of milk and water. The mouth may be washed out

by means of a camel's hair brush, with a lotion composed of a salt-spoonful of borax dissolved in a wine glass of warm water and just sweetened; the application may be made three or four times a day, and especially just after feeding.

If the general health is affected medical aid should be obtained.

244. *Cold in the head*—(coryza) is a very serious matter in an infant. The child breathes chiefly through its nose; the stoppage therefore of the nostrils by the accumulation of the matter, which soon dries and forms a hard mass, causes partial suffocation. When the child does not inhale sufficient air it soon becomes languid, ceases to grow, and may quickly die if the disease does not yield; moreover it cannot suck properly if the nostrils are closed, and thus it becomes gradually starved. The inflammation in the back part of the nose causes the child at first to snuffle, but as the discharge becomes thicker, gets dry, and blocks up the passages, the child, after making ineffectual efforts to inspire through its nose, at last opens its mouth and gasps for breath.

The first thing to be done is to cover the whole of the child's head with a closely fitting flannel cap, which must be kept on day and night until 'the cold' disappears. If the child does not quickly improve medical aid must be sought.

245. *Milk* in the breasts of the infant is sometimes met with. It is a matter of no consequence except that ignorant people are apt to pull the breasts about and irritate them, and so do mischief. It is well to moisten the breasts with a little olive oil once or twice a day, and protect them by a little cotton wool from pressure of the dress. The secretion ceases by the end of the month.

246. *Inflammation of the eyes—sore eyes*—may prove a very serious calamity if not treated properly at the beginning. A few hours even may be sufficient to destroy sight. It is not unfrequently caused by the soap; most frequently—perhaps always—it occurs in weakly infants, badly nourished and ill cared for, who have been exposed to cold; it is supposed

also to be caused by contact with the discharge from the mother's vagina when that has been unhealthy.

At the commencement of the affection, the eyes, one or both, look reddish, weak, and weep; soon a thick discharge takes place, the eyelids are found gummed together when baby wakes in the morning, and as the inflammation increases they swell up and become closed. Meanwhile the general health suffers, the infant becomes restless and feverish with confined bowels and coated tongue. The surgeon must be called without delay, and until he gives his orders the nurse should bathe the eyes frequently with warm water, taking care not to wipe them, but to wash away the matter by letting a stream of water trickle upon the eye, either dropped from a sponge, or directed with a glass syringe. Great care must be taken that none of the matter gets into the eye of another person, as it will quickly set up the same disease.

247. *Eruptions* on the skin, whether dry, as 'Red Gum,' or moist like 'Milk Crust,' or as small boils or hard lumps, are usually brought on by some error in diet. They are chiefly of consequence because they irritate the child, and prevent it thriving. If the eruptions instead of fading away in a day or two spread and get more troublesome medical aid must be resorted to. An eruption of red spots, intermixed with reddish blotches, sometimes appears on the face and body of the infant before it has sucked at all. This rash usually disappears in twenty-four hours, without requiring treatment or leaving any ill-effects.

248. *Convulsions* are of very serious importance, and demand medical aid. They are sometimes the consequence of some injury received during birth; more commonly during the first two months they result from improper food or from exposure to cold. When a fit occurs, and while waiting the arrival of the accoucheur, the midwife may put the infant into a warm bath for from three to five minutes, or its feet and legs may be immersed in warm water. The foot-bath

may be made more stimulating by putting into the water a table-spoonful of mustard enclosed in a muslin bag. If the fit seems to depend upon loaded bowels, a clyster of two table-spoonfuls of very thin warm gruel may be administered, but there must be no delay in obtaining medical advice.

249. *Weakly* infants especially those born prematurely, require very great care to rear them. The premature infant should be lapped in cotton wool instead of being dressed in the ordinary way. If the limbs are found to lose their proper warmth while the infant lies in its bed, hot-water bottles should be made use of. One or two soda-water bottles filled with hot water carefully corked and wrapped in two or three folds of flannel are very useful, placed near the infant's body and limbs. Cow's milk seldom agrees with these sickly ones; they require other food, and probably medicine, to keep the spark of life alive. The treatment must be directed by the physician, as the midwife dares not take such responsibility upon herself.

250. The so-called *port-wine stains*, *mother-marks*, *moles*, may in certain cases require surgical aid, which should be sought for early if the mark, &c. appears to increase in size.

Tongue-tie is really of very rare occurrence; if the baby, however, cannot suck properly from this cause, or from defect in the lips as *hare-lip*, or in the mouth as *cleft palate*, the surgeon must be consulted without delay. Incapacity to take its food properly and in sufficient quantity, will very quickly either terminate the infant's life, or cause it to become a puny, weakly child.

CHAPTER III.

ILLNESS DURING THE LYING-IN.

THERE are certain unfavourable conditions which sometimes occur to women during their lying-in which are of very grave tendency, and usually require skilled medical

attendance. It is of great importance that the midwife should be able to recognise the first stages of serious illness, that she may summon timely assistance, and in the meanwhile act in the most judicious manner towards her patient.

251. *Collapse.*—After any labour the mother experiences more or less a state of collapse, consequent on the shock she has endured. The collapse is proportionate to the effect the labour has produced on the general system ; it may be very slight, but it may be so severe that the patient requires a long period to recover from it, and may even die without reaction setting in. If, then, on the termination of the labour, the mother, instead of going to sleep, or at least reposing quietly, lies exhausted, is restless, or, after a short doze, does not recover herself, but is much depressed, and there are no signs of reaction, her state is very perilous. The accoucheur should be sent for, and meanwhile the midwife must keep the room in perfect quiet and the light dimmed, for during this exhaustion the sensations of the patient are often unnaturally acute, though sometimes, on the contrary, dull, while the breathing is hurried and laboured, and the pulse fluttering. These symptoms are usually marked when there has been much hæmorrhage, or hæmorrhage is going on, either internally or externally, §§ 77, 175, 252. The midwife must especially beware of allowing the patient to rise, even into the sitting posture, for many cases of death have occurred in consequence. She must give table-spoon doses of brandy and water alternately with the same quantity of strong beef-tea every quarter or half hour, until the accoucheur takes the case in hand, and his directions must be followed out minutely.

Death occurring in collapse is often due to the formation of a clot of blood in the heart, which embarrasses its action as well as that of the lungs.

252. *Uterine hæmorrhage*, or 'bleeding from the womb' coming on some days after the labour is complete, is called *secondary hæmorrhage.* It will seldom occur if the midwife

has carefully followed the instructions already laid down, but yet it sometimes does. The mother gets up too soon, or upon her sitting up in bed, straining at stool or to pass water, or allowing the bladder to become over-full, the womb relaxes, and blood escapes plentifully.

If the lochia, § 224, continue to be pure blood over four days, the mother must keep her bed for a week longer than the nine days, § 229, and this rule must be observed if on rising the same kind of discharge reappears. If, then, in spite of the directions already given, the mother suffers from difficulty in passing water (dysuria), or at stool, or if she continues exhausted and has symptoms of general illness, or is losing more blood than she ought, the midwife should decline the responsibility and call in medical aid. If the hæmorrhage be excessive, and the loss of a small quantity of blood is very perilous to an exhausted woman, the treatment already detailed must be proceeded with pending the arrival of the accoucheur.

253. *Inflammation of the womb* (metritis), or of the neighbouring parts (parametritis) may come on, although every care has been taken, especially in women of an unhealthy habit of body; it is mostly to be feared when the labour has been tedious or difficult, especially in the second stage. The signs are tenderness on pressure over the womb, and especially at one side of it; the lochia, § 224, frequently stop for a day or two, and perhaps return with increased flow; the woman feels a dragging dull pain on passing water, but chiefly when the bowels act. Pain at the womb increases, and must not be mistaken for *after-pains*, § 223. These are of shorter duration, begin at the sacrum or cross-bone, and come and go at intervals, but the pain in inflammation is constant, or at least the tenderness on pressure over the womb is. If matters are allowed to go on, by and by there will be general disturbance of the system. The woman will probably have a shivering fit or rigor, a sign of great consequence, followed by heat of skin and quickened pulse. If there is further delay in calling for medical aid, serious

mischief, involving life-long injury to the parts, may be the result. Whenever, therefore, the midwife finds her patient is 'not so well' as she expected, is suffering from pain and tenderness about the womb, and these symptoms augment during the next twelve hours, she should avoid further responsibility and call in medical aid. Meanwhile she must keep her patient quiet, and cover the abdomen with a large linseed-meal poultice.

254. *Falling of the womb* (prolapsus uteri) is very apt to occur in women who leave their bed too soon after labour, particularly if it has occurred previously. The only remedy is at once to lie down again, if not in bed, at least to use the bed as a couch. This falling of the womb prevents it resuming its natural size, and, if neglected, it will remain enlarged, and a kind of slow (chronic) inflammation will set up, causing life-long misery and pain, with profuse 'whites' and 'bearing down.' To prevent such threatening evils, the advice of the accoucheur ought to be sought.

255. *Inflammation of the vagina* or 'front passage' very rarely occurs during the pregnancy unless some injury has been done to the part or disease communicated. It is very apt to occur after 'lingering' or tedious labour, from pressure of the head, and especially if it has been necessary to introduce the hand or the instruments. The midwife recognises inflammation by the pain caused on touching the part either with the finger or pipe of the syringe; it feels hot and at first dry, but presently a mattery discharge, often offensive, is set up. If badly treated, most serious mischief may result. The sides of the passage or vagina may become glued together in parts and so narrowed as to endanger the life both of the mother and child in a future labour, or the separation between the vagina and bladder may be destroyed, and then the urine will be constantly dribbling away, rendering a severe operation necessary to cure the evil. The midwife, if she suspects inflammation, must call in the surgeon. Meanwhile she should inject, using the utmost

gentleness, every three hours a lotion made by boiling two poppy heads in a quart of water, and adding to each pint a tea-spoonful of Condy's Fluid, § 154, at time of using; the injection should be used tepid, or as warm as is agreeable to the patient.

256. *Inflammation of the privates* (pudenda) is generally the result of injury at the time of the birth. About the second day the parts are very tender and somewhat swollen. The midwife must examine the parts carefully and bathe them frequently with the poppy-head water. If they do not improve in twenty-four hours, but begin to look dark and unhealthy, severe mischief may be coming on, and therefore the surgeon must be called in.

The midwife will generally find some symptoms of fever, with disturbance of the whole system, when inflammation is setting in on any part of the body.

257. *The Breasts—Sore Nipples.*—If cleanliness has been neglected and the nipples have not been washed regularly and taken care of, they are very apt to become chapped or cracked, and these little wounds, though almost unfelt before suckling commences, become intolerably painful when the infant begins to draw the breast. The teat before the infant takes it must be washed with water and dried, the mouth of the infant should also be washed out with a little borax dissolved in water, a tea-spoonful to a wine-glass of warm water, then placing on the teat a nipple shield of indian-rubber, or of glass, the infant can take his meal. After the meal is over the nipple should be again washed with water and then bathed with a strong decoction of green tea, made by boiling an ounce of tea in a pint of water; to a table-spoonful of this decoction, a tea-spoonful of brandy may be added. After the application a pad of soft cotton wool should be placed to prevent the dress rubbing the breast. If the nipple is very painful and raw after suckling, a small bread and water poultice will relieve the anguish, and when the pain subsides and the nipple ceases to ache and burn, the tea may be applied. In using

a metal, or wooden, or glass nipple shield, care must be taken that the nipple is not pinched in the neck of the shield. If these means prove insufficient, a surgeon should be applied to. Excessive irritation of the nipple and the dread of the pain caused by suckling, may prevent the breast from being properly emptied and thus lead to

258. *Inflammation of the Breast.*—This unfortunate accident may arise from injury by a blow or from exposure to cold, but the most frequent cause is 'sore nipple.' The breast becomes very tender, especially in one spot which feels hard, and if near the surface the skin looks red.

If this condition is allowed to go on unrelieved, the next stage will be the formation of matter (*abscess*). The woman at this point is generally attacked with shivering and feels ill. The surgeon must be called in, and while waiting his attendance the nurse must apply linseed meal poultices.

259. There is a condition of *over distension of the breast*, which feels knotty and generally hard, and aches, but is not actually painful as when inflamed, in which much relief is afforded by chafing it gently with oil. The patient should lie on her right side when the left breast is to be rubbed, and on the left side for the right breast. Friction should be made, beginning at the base of the breast and advancing gradually round towards the nipple; the utmost gentleness must be used and plenty of oil. When this 'over distension' arises from the inability of the infant to empty the breasts, a good plan is to draw them by means of a breast-pump, a substitute for which is readily obtained by filling a soda-water bottle with hot water, emptying it, and placing the mouth over the nipple, from which the milk will then run into the bottle. This is a good method to use, when the nipple is painful, to start the flow, after which the infant will go on and draw the milk with much less pain to the mother.

'Over distension' of the breasts may arise upon the death of the child, or because the mother does not nurse it. The treatment under these conditions must be the same as

just mentioned, but in addition, the mother must restrict herself in the amount of food, and especially in the amount of liquid she takes, and the bowels must be kept well open with occasional doses of salts and senna. Just so much milk must be drawn from the breasts when they are full, as will relieve the tension, and this amount will diminish day by day, until at about the end of a fortnight no inconvenience is felt.

260. *Fever.*—The ordinary symptoms are a sensation of increased heat, usually preceded by a fit of shivering or rigor; the skin at first feels dry and pungent, after a while becomes moist and again becomes dry. The pulse is usually quickened, sleep is broken and ungenial, there is headache and loss of appetite.

Whenever any or all of these signs are present, the midwife or nurse must pay the greatest attention to the patient. They may be the beginning of that most fatal disease, puerperal or childbed fever, or they may only be the signs of what is called milk fever, or ephemeral fever or weed.

261. *Milk Fever—Weed—Ephemeral Fever*—is not really dependent on the milk coming into the breasts, and therefore to be expected in all cases. Fever is a symptom of some unhealthy condition, and is not present in the ordinarily healthy lying-in woman. The so-called milk fever originates in some alteration of the proper condition of the womb, which at the time these symptoms occur, should be actively diminishing in size, as shown by the large lochial discharge, § 224. The only true milk fever is that which is excited by inflammation of the breasts. The symptoms, however, in this so-called 'milk fever,' 'weed,' or 'ephemeral fever,' are transient in their character. There is a rigor or fit of shivering, followed by the hot dry skin, which presently breaks out into a profuse sweat. During the hot stage there is headache, flushed face, and parched mouth; when the sweating comes on the patient falls asleep, and

wakes refreshed, though exhausted in proportion to the severity of the attack.

The midwife will note especially that there is little or no tenderness over the womb. Immediately shivering occurs, whatever be the exciting cause, the midwife or nurse must put a hot-water bottle or hot blanket to the feet, cover the patient up warmly, and make her drink plentifully of hot whey or weak tea. If the sweating stage does not come on, or if the patient is not relieved by it, but looks ill and distressed, the accoucheur must be sent for, as some formidable illness is probably impending, and loss of time in obtaining proper treatment may be fatal.

262. *Convulsions* may occur after delivery. The midwife, while waiting the arrival of the accoucheur, must act as already directed, § 179.

263. *Puerperal mania* also requires prompt medical aid.

264. *Paralysis* either of the lower limbs, or of one side of the body, though usually commencing previous to complete delivery, § 180, is sometimes not recognised until after the lapse of some hours. The accoucheur must be sent for and the midwife must be particularly careful to see that the bladder does not become overloaded, but use the catheter, if required, without delay.

265. *White Leg* (phlegmasia dolens) usually occurs about twelve days after labour. Tenderness comes on in the groin, the thigh begins to swell and at last becomes hot, tense, white, and shining. The tenderness and pain may occur in the calf of the leg. The severity of the attack differs greatly, and the general symptoms of fever are usually in proportion. The accoucheur must be sent for, and meanwhile the leg should be well fomented with hot flannels and then wrapped in cotton wool. It almost always terminates favourably, and not unfrequently occurs first in one leg and then in the other. Its occurrence is most usual when there has been a considerable loss of blood, or such an alteration in the quality of the blood as leads to the formation of clots in the veins.

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